

Non-Profit Management System for Friends of the Elephant Seal

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Abstract

Friends of the Elephant Seal (FES) are a non-profit organization based in San Simeon, California. Their current method of tracking and reporting information is inefficient. A project was proposed to develop a new information management system for FES, install it at their office and provide training including a user manual. The project was divided into three parts: Database Design and Implementation; User Interface Design and Ergonomics; and User Manual & Help System.

The objective of the project was to design a user-friendly interface specifically for the FES worker that allowed for easy access to data entry functions, reporting functions and mailing functions. The user requirements were gathered through interviews with FES staff. The business units that required data tracking and reporting were Membership, Docents, Contributions, Fundraising and Mailing. The system was designed in Microsoft Access 2007 and the final design was achieved through several iterations of improvement and refinement. The resulting finished system consolidates previous workflows scattered across several files and programs into a single Microsoft Access file. All business functions can be executed by pointing and clicking on clearly defined menu elements and buttons. The work was economically justified based on the fact that FES is a non-profit organization that meets its annual operating budget of \$100,000 solely through donations, grants and their own annual fundraising event. Rather than FES spending donated cash on a commercial software package, it is more beneficial to their operation to enlist volunteers to develop a solution and use those volunteered hours as credits on their next round of grant applications.

Section I. Design & Implementation

Introduction: Design & Implementation

The scope of this senior project is to design and implement a comprehensive, user-friendly database for the Friends of the Elephant Seal, a non-profit organization based in San Simeon, California. The goal of the Friends is to educate people about elephant seals and to teach stewardship for the ocean and its inhabitants. Currently, the Friends use very archaic methods of tracking membership, volunteer hours, and donations. Most of their data entry and manipulation is done manually and often on paper. This results in many inconsistencies in their existing data and formatting. Most importantly, their current method of data capture severely limits their ability to 1) track and analyze their data and 2) produce meaningful business reports and business communication. Our goal is to design and implement a Microsoft Access database that is customized to their specific needs. We will ensure that our design is ergonomic and intuitive for all users. This database will have an ergonomically designed front end that will be navigated through a network of switchboards and/or tabbed pages. Since the specific user demographic will be women above the age of 60 years old, it is critical that our interface design be as intuitive, ergonomic and as easy-to-use as possible. The user interface will be the primary means of navigating the database so we will include on-screen help and detailed instructions where appropriate. In terms of business use, one of the most important aspects of the database will be its reporting capabilities. For all default reports, we will minimize, as much as possible, the effort required to generate

professional reports. We will accomplish this by building in integration capabilities with Excel, Word, and Outlook. Since our specific user demographic may not be the most computer savvy, our inclusion of an ergonomic and intuitive interface along with detailed instructions for report generation is crucial. Detailed instructions will be provided both on-screen (as needed) as well as included in a printed user manual with clear step-by-step instructions with screenshots. The standard reports and queries that we design must be clear and accurate since they will be directly used in applications for large financial grants or to contact specific members and/or specific donors. We will create two versions of the database: the first database will be locked so that the user will only have access to predefined reports and queries that we create; the second database will be unlocked and available to be edited or updated in the future. After meeting with Judy Burley, the Friends of the Elephant Seal secretary, we have compiled an initial list of functionalities that would be most beneficial to the users of the database. However, this list is not yet comprehensive and finalized. We hope to have a finalized list after our meeting on November 6.

With regard to design and functionality, our goal is to create a product that will contribute to usability and productivity for business use. We will include the ability to track docent volunteer hours by date, time period, and/or individual. Since annual volunteer hours are a key measurement required in the application for grants, our inclusion of such tracking abilities will greatly increase their business productivity. Their current procedure requires that each docent write their hours on a sheet of paper

and submit that tracking sheet to the office. At periodic intervals, an administrator will gather the tracking sheets for all docents and transfer the information to a generic table in a standalone Excel file. Our solution will be to design a simple and efficient interface that either the docent or an administrator will use to enter the hours at the time they are submitted (or whenever is convenient). These records will be captured in the database as opposed to being maintained in a standalone file. Capturing this data in the database allows for further analysis and easier reporting if needed. Our database will also allow the user to enter, track, and report all donations. We will track donations from members, non-members, businesses and individuals/families. The donations fall into two categories: cash donations and in-kind donations (non-cash such as a product, service, or volunteer time). We will track member status (active or inactive) and include the ability to notify members to renew. The notification process will likely involve integration with Microsoft Outlook for mass email and integration with Microsoft Word for direct letter creation via mail merge. For all members and docents, our database will record their personal information (address, phone number, etc.), their contributions (financial, volunteer, or both) and other information as required or requested.

This senior project will be approached in three distinct phases with each phase presenting its own unique challenges. The initial phase will involve collecting and sorting all relevant data and determining the business functionality that the Friends require in the database. The next phase will involve designing the structure of the database to meet those business requirements. The last phase will involve testing and

debugging, first by ourselves and then by the Friends staff prior to delivering the finished product. The initial phase will involve conducting interviews and seeing what functionality they have with their current data collection techniques. Based on their business requirements for the database, we will create a set of proposed milestones with a general timeline in Microsoft Project (Gantt chart). The timeline of the initial phase will be difficult to estimate. Prior to designing the schema of our database, we will need to spend time deciphering and cleaning up all of the raw membership data, docent data, and contributions data. Much of their data is inconsistently formatted and unconstrained. For a simple example, some membership records do not list a First Name and Last Name; instead the record shows “The Williams Family” with “The” being the First Name and “Williams Family” as Last Name (actual name changed for privacy). We will work with the Friends to clean up their data and most importantly, agree upon the constraints for all of the different data types. This is especially important in our implementation of mail merging and reporting because the information merged with a standard letter or report must be consistently categorized and formatted within the database tables. Once the data is prepared and we have an explicit list of desired reporting and tracking functionality from the Friends staff, we will enter the next phase of the project involving analysis of all entities and relationships in order to design the most structurally sound database (at least third normal form where appropriate). Once the database structure is designed, we will begin populating tables with data, designing the queries and reports, and building in Microsoft integration capabilities with Outlook,

Excel and Word. We will track problems encountered and update the timeline as needed. Our documentation will also include detailed thought processes and justifications for our chosen design. For example, in query design, we will illustrate the logic of the query using relational algebra notation learned in IME 312. During the final phase of testing and debugging the prototype, we will document any issues we (and they) encounter with our prototype version and will track revisions and improvements in development of the final product. This phase will involve many hours of inputting false or null data into our table to make sure that it is properly constrained and “foolproof”. Since we will not be present for the day-to-day use of our database, it is imperative that it is tested to handle any potential user error or unforeseen data entry. When we are confident that our database is complete and ready for daily use, we will complete a comprehensive user manual including a walk-through of all functions including screen shots. We will provide a prototype version to the Friends staff for their approval and recommendations for any minor changes. We anticipate that all the above tasks as well as scope creep and unforeseen roadblocks will require between 450 and 600 hours of work.

Background: Design & Implementation

In 1990, the elephant seal population near Piedras Blancas lighthouse was less than two dozen. One year later, almost 400 elephant seals were counted on those same beaches.

In 1992, the first elephant seal birth was recorded in that area. The colony continued to grow and by 1996 almost one thousand births were recorded. This growing elephant seal population presented an immediate safety hazard to both the elephant seals and visitors alike.

Friends of the Elephant Seal were formed in 1997. The organization is run by volunteers and their goal is to educate people about the seals and their environment. Respect for the seals and public safety are their primary concerns. There are volunteers (docents) at the viewpoint to answer questions and help visitors get the most from their viewing experience.

Caltrans has recently made improvements to the viewing point that has enhanced the viewing of the elephant seals. They added new walkways, interpretive signs in many languages, and handicapped parking with access. This increased visibility has resulted in increased memberships for the Friends. As a result, the Friends are in even greater need for improved data collection, tracking and reporting capabilities for members, donors, and contributions.

To gain insight into their daily business operations, we met with Judy Burley to discuss their current capabilities as well as any new functionality they would require in our database design. We will be meeting with Diana, the primary user of our database, on November 6 to create a detailed list of requirements and capabilities. We have gained a considerable amount of ideas and information from their website

(www.elephantseal.org) that we hope to include in our implementation.

We have researched non-profit organizations similar to Friends of the Elephant Seal in order to create a database design that would accomplish many unforeseen needs of a non-profit. We have spoken with the non-profit organization, the Friends of the Inyo, regarding the organization of their hours and donations. The Friends of the Inyo use the non-profit management software GiftWorks. We have downloaded the free trial version of GiftWorks and are currently exploring its interface and functionalities to compile a list of ideas for our interface as well as database capabilities.

Motivation: Design & Implementation

Our main motivation to do this project is to help the Friends of the Elephant Seal and make a difference in their day to day activities. All people involved with the Friends of the Elephant Seal are volunteers and are doing what they can to help. Since their current methods of data collection, analysis and reporting are severely limited, we feel the best way to help is to design and implement a Microsoft Access database that is customized to their very specific needs. We also feel that our project will benefit the elephant seal population of Piedras Blancas as well as the local ocean environment because our database will improve their business productivity. This increased productivity results improves their ability to drive fundraising efforts via membership recruitment/renewal and solicitation of contributions. These monetary gains will in turn be used to fund public education efforts for their cause.

The Friends operate on an approximate annual budget of \$100,000. They rely solely on donations, volunteers, and government grants to maintain their operation. The specific dollar amount of each government grant is based on the number of volunteer hours worked. Since we will be working directly for the organization, each team member's cumulative time worked on the project will qualify as volunteer time on any grant application they submit, thus increasing the potential amount awarded to the Friends. We estimate that our project will require between 450 and 600 hours of work to complete. At a conservative labor rate of \$20 per hour, our services would be valued at approximately \$9,000 to \$40,000 for the Friends of the Elephant Seal in time donated. In addition to helping an organization in need, this project will give each of us real-world experience as engineering consultants in a professional environment. This also gives us a chance to use many of the skills we have learned in our studies at Cal Poly to meet the goals and objectives of a specific real-world client. Given that we will be graduating in the near future, it is appropriate to note that all employers specifically require that prospective engineering job applicants have excellent written and oral communication skills. Since we will be required to incorporate verbal and written requests into a finished product, this project provides each of us an opportunity to improve and refine our current communication skills. Furthermore, we will be able to produce a technical document in the form of a detailed user manual that illustrates our level of written communication skills. Upon graduating from Cal Poly and entering the workforce, our jobs will require that we perform in a team setting to accomplish a

specific set of goals. The problem-solving skills and teamwork experience that we gain from this project will be an invaluable resource to us in our future careers.

Literature Review: Design & Implementation

- 1) Patrick, J. J. (2008). SQL Fundamentals, Third Edition. Prentice Hall.
- 2) Lawson, S., & Luksetich, D. (2008). DB2 9 for z/OS: Database Administration Certification Study Guide. MC Press.

This literature review explores relational databases, their necessity in information management, and precedence for designing and implementing a Microsoft Access Database for Friends of the Elephant Seal.

A relational database is a program designed to organize data for real -time accessibility by a number of users. “A relational database is designed with the expectation that your information requirements may change over time. You might need to reorganize the information you have or add new pieces of information to it. Relational databases are designed to make this type of change easy. Most other computer systems are difficult to change. They assume that you know what all the requirements will be before you start to construct them.” (Patrick, 2008)

In order to maintain data integrity, a standard of data normalization should be set for any database. The most basic forms of normalization are first normal form (1NF), second normal form (2NF), and third normal form (3NF). Third normal form is considered to be an optimal form for most databases. The main characteristics of third

normal form are: data relations should be in second normal form, no data elements are dependent on other non-key data elements, and every non-key attribute is non-transitively dependent on the primary key. (Lawson & Luksetich, 2008) “Data anomalies can occur when the data is not stored in at least third normal form. A *data anomaly* is a condition in which the value for a specific occurrence of an attribute occurs in more than one location and the value in one location differs from that in the other location.” (Lawson & Luksetich, 2008)

For the Friends of the Elephant Seal, a relational database, created and implemented using Microsoft Access, will meet all their data management needs. For a non-profit organization, it is important to be able to maintain records of dynamic information, such as member addresses and donations. It is also important that this data remain accurate and not be compromised by poor database design. It is for these reasons that a Microsoft Access database in the third normal form will be implemented for the Friends of the Elephant Seals.

3) Korth, Henry, Abraham Silberschatz, and S. Sudarshan. *Database System Concepts*. 5th ed. New York: McGraw-Hill College, 2005. Print.

Chapter 2 of this textbook explains in great detail the structure of relational databases. All components of the relational database are defined and discussed in detail (e.g.

attribute, domain, table, relation, tuple, null value, schema diagram, database schema, relation schema, primary key, candidate key, foreign key, query language, etc.). This chapter also discusses several relational algebra concepts including the following operations: Select, Project, Union, Set-Difference, Cartesian-Product, Rename, Set-Intersection, Natural-Join, Outer Join, Division, Assignment, Deletion, Insertion, and Updating. Many of these concepts and operations will be implemented in our FES database so it is important that they are defined and discussed appropriately.

Chapter 6 of this textbook discusses database design and the entity-relationship model. Regarding design, this chapter outlines some strategies and approaches to good database design while noting things to avoid and other pitfalls. With regard to the Entity-Relationship model, this text discusses in detail the concept of entity sets, relationship sets, attributes (single and composite, single-valued and multi-valued, and derived) and constraints including cardinality ratios such as one-to-one, one-to-many, many-to-one, and many-to-many. Chapter 6 also includes discussion of E-R diagrams and some standard symbols and notation that we will be including in our diagram for the FES database. This chapter also includes discussion of appropriate use of weak entities.

4) Viescas, J. L., & Hernandez, M. J. (2007). *SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL, 2nd Edition*. Addison-Wesley.

In chapter 1 of *SQL Queries for Mere Mortals*, Viescas & Hernandez explain primary, foreign, & composite keys. “The primary key is one of the most important keys in a table because it uniquely identifies each record within a table and officially identifies that table throughout the database. It also establishes a relationship between a pair of tables.” (Viescas & Hernandez, *SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL*, 2nd Edition, 2007) A foreign key is one that references the primary key of another table. Finally, a composite key is one that is composed of two or more fields. This implementation will contain all of these types of keys. Each has merit in a given situation. A composite key can be very useful when tracking multiple records for an individual. In this implementation, a composite key can be used in the table containing all member records. The fields of this composite key would be the member ID and the record number. Using a composite key in this way is very conducive for dynamic querying for the most recent or active record. This implementation will also use a primary key in every table in order to maintain data integrity. “As long as the values of the primary key are unique, you have a means of ensuring that there are no duplicate records in the table.” (Viescas & Hernandez, *SQL Queries for Mere Mortals: A Hands-On Guide to Data Manipulation in SQL*, 2nd Edition, 2007)

5) Litwin, Paul. "Fundamentals of Relational Database Design." *Deep Training*. Web. 23 Nov. 2009.

<<http://www.deeptraining.com/litwin/dbdesign/FundamentalsOfRelationalDatabaseDesign.aspx>>.

This paper was presented at a Microsoft TechEd conference and provides a general overview of design theory and a step-by-step approach to database design. Litwin points out that some of the benefits of designing a database based on a relational model include: efficient data entry, data retrieval, updates, deletions, summarization and reporting; predictable behavior, easy changes to database schema. With regard to the specifics of structural design, Litwin discusses some strategies to selecting primary keys such as “the principles of minimality (choose the fewest columns necessary), stability (choose a key that seldom changes), and simplicity/familiarity (choose a key that is both simple and familiar to users).” Throughout the rest of the paper, Litwin discusses the concepts of cardinality, normalization, integrity rules (general and database-specific), and ends with a 20 step approach to database design, which includes: writing out a basic mission statement; normalizing data; creating prototype tables, queries, forms, reports; evaluating the prototype; refine and redesign as needed; create final forms, reports, and queries; user test; refine; deliver final system. Litwin also includes some discussion of when to “break the rules” and denormalize.

6) Viescas, J. L., & Conrad, J. (2007). *Microsoft Office Access 2007 Inside Out*. Microsoft Press.

This Microsoft Access-specific document, details the capabilities of Microsoft Access 2007 and many of its functions. One such function is the form. The form is one possible method of interaction with the end-user. The database developer can design the database to take input and display output. “Depending on how you’ve designed the form, you can work with your data in an attractive and clear context, have the form validate the information you enter, or use the form to trigger other forms or reports based on actions you take while viewing the form. ” (Viescas & Conrad, Microsoft Office Access 2007 Inside Out, 2007) Forms can pull data from tables and queries to display the desired data to the user. Forms can also take specific input to sort the data using dynamic queries. A user may also add data to tables through forms that are linked to those tables. By limiting table input to forms, the developer is able to ensure data validation and normality. Using forms, our implementation will interact with operators from the Friends of the Elephant Seal in a way that limits the operator’s ability to manipulate table data outside of normal transactions. The use of forms should establish and maintain data integrity for the Friends of the Elephant Seal.

7) Diamond, S. B., & Spaulding, B. (2007). *Microsoft Office Access 2007 VBA*. Que.

There are two main methods of creating tables, queries, forms, and reports in Microsoft Access. The most common method involves using Microsoft Access’s user-friendly

interface and related tools. The second is to use Microsoft's VBA, or Visual Basic for Applications. "Besides VBA, however, there are also macros and SQL statements. Each of these choices has advantages and disadvantages. Neither of them is mutually exclusive, meaning you can use VBA, macros, and SQL together in the same application." (Diamond & Spaulding, 2007) The ability to use all of these is what makes Microsoft Access such a powerful tool. VBA is an especially powerful in that it is also capable of controlling other VBA-compliant applications such as Microsoft Excel and Word. This procedural programming language is at the basis of functions like Mail-Merge in Microsoft Word. Capabilities of this nature will be used in this project to create standardized letters for the Friends of the Elephant Seal to be addressed and personalized for any or all members and donors.

8) Jennings, R. (2007). Special Edition Using Microsoft Office Access 2007. Que.

"Access 2007's Mail Merge Wizard can help you create a new mail merge document or employ an existing mail merge document from which to create form letters. The Mail Merge Wizard uses a table or a query as the data source for the merge data file."

(Jennings, 2007) With the ability to mail merge from dynamic queries into Microsoft Word in our implementation, the Friends of the Elephant Seal will have the capability to generate automatic messages to specific groups such as donors, inactive members, or

docents. This capability will save the database operator countless hours while allowing the Friends of the Elephant Seal to reach out to a larger network.

9) Mission Research. (2009). Retrieved December 8, 2009, from GiftWorks Manual: <http://www.missionresearch.com/giftworks/guides/GiftWorks2010/GiftWorks-Manual.pdf>

GiftWorks is a non-profit management system similar to the implementation detailed in this report. We have reviewed the different available reports in GiftWorks to determine what types of reporting would be most beneficial to Friends of the Elephant Seal. Some available reporting options in GiftWorks include: Top Donors, Recently Lapsed Donors, Donors by Giving Level, Source of New Donors, Donors by Category, and Donor Addresses. In order to design these reports, the database developer must organize the tables and queries in such a way that donations can be sorted by dates, total donations, how the donor found out about FES, and active donor record.

10) Morris, K. (1994). *Database Management Systems in Engineering*. Gaithersburg, Maryland: National Institute of Standards and Technology.

Change management is a major aspect of a database implementation. As new procedures are implemented it is important to document all changes made in order to train users on new procedures and explain why previous procedures were abandoned. "Changes usually occur incrementally as designers explore alternatives. Therefore, recording the

changes and the history of changes is an important database management service.” (Morris, 1994) It is also noted in this article that all collaborators must be notified as changes are made. In this implementation, all team members will be notified as changes are made and the customer will be notified of all changes made throughout the project upon completion. Documenting changes made throughout the project also benefits any future developers who intend to improve our database.

Design: Design & Implementation

The design of the solution is based on the original FES system, communication with FES staff regarding desired capabilities, and research regarding solutions for similar implementations. The design process was completely iterative, including a complete structure redesign.

Database Structure Development

Upon initially meeting with the staff of the Friends of the Elephant Seal, it was determined that a relational database would most likely be the most effective and accurate way to manage the FES information. Alternatives that were discussed but dismissed were: the purchase of outside software, such as GiftWorks, or development of our solution on a different platform, such as Microsoft Excel. Database design in

Microsoft Access 2007 was chosen for its superior ability to create a detailed user interface, to limit user access to the raw data, and to validate input and output data.

Query Design

After choosing and building all data tables in Microsoft Access, all information queries had to be created. These queries included all necessary reports, all information to display lists inside the interface, and all append, update, and delete queries. Because all queries are called by the interface and not directly by the user, each unique page of the interface required a separate query. (Examples of queries can be found in Appendix I.)

Data Validation

To avoid the many data inaccuracies that were common to FES's old system, data validation was built into much of the interface and all non-select queries. Non-select queries are those that manipulate the table data and consist of append queries, update queries, and delete queries. It is crucial to maintain data validation in these specific queries in order to avoid the addition of duplicate data or the manipulation of records outside of the targeted tuples. This solution also verifies, within the interface, that all input to append or update queries is correctly format. This step of validation maintains that important fields do not contain improperly formatted entries or null entries. One example is that this system verifies upon attempted submission of a new or edited record that all email addresses contain an '@' and a '.', with the '@' appearing before the '.'. Consistency is also maintained upon submission to ensure that the field correlating

to the preferred method of contact is not null. In these ways, this solution ensures a high level of data accuracy.

Methods: Design & Implementation

The initial design was created in an Entity-Relationship Diagram. Once this diagram fully represented the FES system and contained all the necessary information, it was then converted to a list of tables and relationships. This information was then input into Microsoft Access 2007, where further details and constraints about each field type could be declared. This then became an iterative process of creating the proper queries to output the necessary information, adjusting the table format to best output the proper information, and linking the tables, queries, and reports to externally designed User Interface. Throughout this development process, “bugs” would be found in the queries or interface. When a bug, or software error, was found, it had to be repaired in all occurrences and many changes had to be made to ensure this bug would not occur elsewhere in the future.

Results and Discussion: Design & Implementation

The solution developed showed significant improvement over the initial state in all targeted areas. The visual ergonomics of the solution incorporates color and field-placement consistency to increase the ease of use. All the information that had previously been managed in different folders throughout the hard drive is now being

stored in one database. The effectiveness of these two changes has been measured using a Paired T-test in a separate report (by Jeff Zinn) and shows a significant reduction in the task time of FES's five most common tasks. This solution also greatly reduces the occurrence of error in the data. This was accomplished through the validation of data input as well as the implementation of a full User Manual. The data validation occurs on all input into tables, specifically checking for invalid contact information. Data formatting is also kept consistent using input masking, which prompts the user to enter the information in a specified format.

Through the previous measurable results, Friends of the Elephant Seal will be able to more accurately and effectively record all data for membership, docents, fundraising events, and fundraising finances. With this more accurate and complete data set, the Friends of the Elephant Seal hope to receive more financial sponsorship through detailed grant applications and higher membership retention. FES also saved \$500-\$1,000 by implementing this software solution instead of purchasing a commercial package.

Conclusions: Design & Implementation

The initial problem was that the Friends of the Elephant Seal were unable to manage their membership, donations, fundraising, information, and volunteer time effectively or accurately. The objective of this project was to create an ergonomic solution that centralized all FES data, allowed for simple data manipulation, and reduced the amount

of error within the data. After investigating commercial alternatives as well as different software solutions, Microsoft Access integrated with Microsoft Professional Suite was chosen as the best platform on which to build the information management system.

This solution was chosen because it is the most cost effective and tailored implementation.

All objectives were able to be accomplished with the new system. After testing to determine that this solution is more efficient than the original system, it was determined that this solution must be implemented with a full user training to ensure proper use.

Although user input is verified and the interface contains help points and hints on all pages, the User Manual will allow the user a tangible reference guide and enable new users to learn the system much more effectively.

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Appendix I

Code Excerpt from Add Fundraising Event Query

```
INSERT INTO tblFundraisingEvent ( EventName, EventDate, EventTime,  
EventLocation, EventNotes )  
  
SELECT [Forms]![frmFundraising_Event_Details_Add]![EventName] AS Expr1,  
[Forms]![frmFundraising_Event_Details_Add]![EventDate] AS Expr2,  
[Forms]![frmFundraising_Event_Details_Add]![EventTime] AS Expr3,  
[Forms]![frmFundraising_Event_Details_Add]![EventLocation] AS Expr4,  
[Forms]![frmFundraising_Event_Details_Add]![EventNotes] AS Expr5  
FROM tblFundraisingEvent;
```

Code Excerpt from Edit Member Update Query

```
UPDATE tblMembers SET tblMembers.[E-mail Address] =  
[Forms]![frmMembership_EditMember]![EmailAddress], tblMembers.[First Name] =  
[Forms]![frmMembership_EditMember]![FirstName], tblMembers.[Last Name] =  
[Forms]![frmMembership_EditMember]![LastName], tblMembers.Organization =  
[Forms]![frmMembership_EditMember]![OrganizationName], tblMembers.[Member  
Since] = [Forms]![frmMembership_EditMember]![DateJoined], tblMembers.[Member  
Type] = [Forms]![frmMembership_EditMember]![MemberType],  
tblMembers.HomePhone = [Forms]![frmMembership_EditMember]![HomePhone],  
tblMembers.CellPhone = [Forms]![frmMembership_EditMember]![MobilePhone],
```



```
tblMembers.[Work Phone] = [Forms]![frmMembership_EditMember]![WorkPhone],  
tblMembers.Address = [Forms]![frmMembership_EditMember]![Address],  
tblMembers.City = [Forms]![frmMembership_EditMember]![City], tblMembers.State =  
[Forms]![frmMembership_EditMember]![State], tblMembers.[Zip Code] =  
[Forms]![frmMembership_EditMember]![ZipCode], tblMembers.Country =  
[Forms]![frmMembership_EditMember]![Country], tblMembers.prefEmail =  
[Forms]![frmMembership_EditMember]![preferEmail], tblMembers.prefLetter =  
[Forms]![frmMembership_EditMember]![preferLetter], tblMembers.prefPhone =  
[Forms]![frmMembership_EditMember]![preferPhone], tblMembers.Notes =  
[Forms]![frmMembership_EditMember]![Notes]  
WHERE ((([tblMembers]![Member  
ID])=[Forms]![frmMembership_EditMember]![InvisID]));
```

Query Deliverables from FES

DOCENTS

- | | |
|-------|--|
| QRY 1 | All Data (all docents) |
| QRY 2 | Active Docents |
| QRY 3 | Docent information including name, address, phone, email, status, notes
date joined |
| QRY 4 | Cumulative Hours per docent |
| QRY 5 | Hours per docent by month |

- QRY 6 Docent roster
- QRY 7 Docent by status
- QRY 8 Labels active docents

CONTRIBUTIONS

Non-cash

- QRY 1 Copy all data, with name, date, item, value
- QRY 2 Current non-cash data within a 12 month period
- QRY 3 Labels for contributors

Cash

- QRY 1 Copy all data with name, date, address, amount and type
- QRY 2 Type of contribution

Types: General Contributions

Contributions from a mailing

Contributions from an event

- QRY 3 All date, name date, address, amount by type
- QRY 4 Labels for Thank You Letters

MEMBERSHIP

- QRY 1 All data- no payment info

QRY 2	All data-with last renewal date
QRY 3	Current Members-these are renewals received within 18 months
QRY 4	Dead Wood-no renewal within 5 yrs.
QRY 5	Current member's yearly renewal notice
QRY 6	Data by member type – Business
QRY 7	Data by member type-Contributor
QRY 8	Data by member type-Sponsor
QRY 9	Data by member type-Benefactor
QRY 10	Data by member type-Lifetime
QRY 11	Renewals not returned 12 months since their letters were sent
QRY 12	Labels based on current members
QRY 13	Labels based on Dead Wood (no renewals in 5 yrs)
QRY 14	Labels for renewals not returned in 12 mos.
QRY 15	New members by month (cumulative years)
QRY 16	Renewals by month (cumulative years)

FUNDRAISING

QRY 1	SASS Merchants, name, address, phone, email
QRY 2	SASS Merchants, last donation date, what donated
QRY 3	SASS Wineries, name, address, phone, contact person, email
QRY 4	SASS Wineries, last donation date, what donated

QRY	5	SASS Artists, name, address, phone, email
QRY	6	SASS Artists, last donation date, what donated
QRY	7	SASS Vendors, name, address, phone, contact person, email
QRY	8	SASS Vendors, late date of service, service provided
QRY	9	SASS Attendees, name, address, phone, email
QRY	10	SASS Attendees, last event attended

Section II. User Interface & Ergonomics

Introduction: User Interface & Ergonomics

The purpose of this project is to develop a fully customized information management system utilizing the Microsoft productivity suite for Friends of the Elephant Seal (FES), a local non-profit organization. The information management system project is divided into three separate projects, each tasked to an individual teammate. The projects are divided as follows: Database Design and Implementation; User Interface Design and Ergonomics; and Form Design, Software Testing and Training. This project was proposed by Professor Lee McFarland to the senior project class as a multiple-person project due to amount of work involved. The problems with the current FES management system are as follows:

- Workflows are not optimized
- Data collection methods are prone to error or inaccurate data capture
- Limited ability to track and analyze data
- Limited reporting capabilities
- Limited business communication capabilities

The scope of the designed solution will include data management, data analysis, reporting and business communication for the following business areas: membership, docents, contributions, fundraising and mailings. With regard to the user interface design and ergonomics portion of the project, the objectives are as follows:

- Design an intuitive user interface that requires minimal training
- Design an ergonomic user interface optimized for elderly users

- Consolidate essential business tracking functions into a single interface
- Reduce cycle time for data entry
- Minimize data entry error

To create an intuitive and ergonomic user interface, research will be conducted in the following topics: user interface design, usability testing, system evaluation and human-computer interaction. After forming the appropriate guidelines for design, the interface will be created in Microsoft Access 2007. To reduce the cycle time for data entry, existing workflows will be centralized into a single system accessible via the user interface. To minimize data entry error, data validation will be built into the user interface.

The design phase will be an iterative process involving feedback from project teammates and our advisor, Professor McFarland. Once the interface is completed, the tables, queries and reports created by project teammates will be linked to the interface. At this point, the system will be tested and benchmarked to measure improvement over the previous management system. The finished management system will be presented and installed at FES. Hands-on training will be provided to the FES staff including a printed user manual for reference.

The remainder of this section of the report refers only to the user interface and ergonomics portion of the project and includes the following: Background, Literature Review, Design, Methodology, Results and Conclusions. The Background section describes the workflows FES currently employ, the data analysis/reporting required

and their communication needs. The Literature Review Section gives an overview of relevant theory previously published in the areas of human-computer interaction (HCI), user interface design and system usability. The Design & Methodology section describes the steps involved in designing a solution, the programming process, challenges encountered and justifications for design decisions. The Results section discusses the success of this project. The Conclusion section provides a brief summary of the UIDE project. The Recommendations section provides a list of areas that may be developed or addressed in a separate project.

Background: User Interface & Ergonomics

Friends of the Elephant Seal (FES) are a non-profit organization based in San Simeon, California. The primary goal of the organization is to educate the public about elephant seals, marine life and ocean stewardship. FES maintains an active roster of over 100 volunteer docents that perform education and outreach along the Central Coast of California and around the world. The administrative staff consists primarily of an office secretary in charge of the daily business activities of FES. Office support personnel contribute on an as-needed basis, e.g. periodic data entry or seasonal event support. FES operates under an approximate annual budget of \$100,000 which is funded entirely by membership contributions, donations, grants and their annual fundraising event. The lack of an effective management system limits their ability to drive membership goals, fundraising goals and maintain accurate docent records – all of which are vital to the health of the organization.

Overview of Current FES Workflows

The workflows addressed in this project are those related to tracking and reporting the following: membership records, docent records, contribution records, fundraising records and mailing requirements. Two common workflows at FES involve adding new members to their records and editing existing docent records. The current management system at FES involves storing files in separate folders on an external hard drive. In order to add a member to their membership records, the data entry personnel

must navigate to the external hard drive, find the Membership folder, open the Membership folder, open the Membership form file and enter the new Member's details. To edit an existing docent, the data entry personnel must either close the current screen or minimize it, navigate to the external hard drive, find the Docent folder, open the correct Docent form, find the existing member and edit the information directly. The screenshot below contains only a fraction of the existing folders and files on their external hard drive.

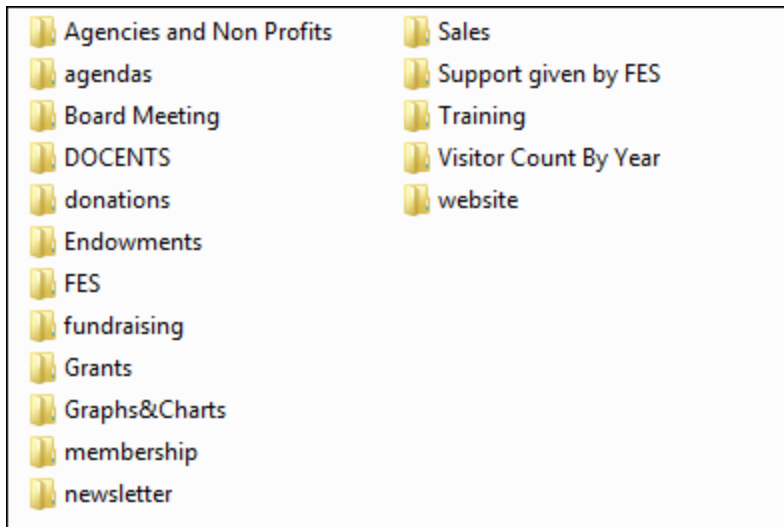


Figure 1. Current FES user interface

When navigating to the external hard drive, the default view in the window that opens is a List view. Finding a specific folder in a large list of folders is requires a great deal of effort since the spacing in List view is compressed coupled with the small screen font. When the office staff was asked to provide the most current records for membership, docents and fundraising, it took several minutes to locate the correct files on the external hard drive. While membership and docent records could be easily found, the

fundraising records were more difficult to locate. The process involved opening several files to check their specific content since the file names were not descriptive and/or a file naming convention was not in place.

This lack of an efficient information management system is an important issue due to the fact that FES staff are generally part-time volunteers who have retired from the workforce. In this demographic, the level of computer literacy varies considerably so an intuitive user-friendly system is critical. Currently, if a new worker were to try to take over the responsibilities of the staff member in charge of data entry, a significant amount of effort would be required to train that individual in how to locate specific types of information. With an improved information management system, the need for this training is completely eliminated and the workflows are greatly simplified.

As a result of this project, users will not be required to create new files and remember any sort of naming convention for file saving. To access all membership, docent, contribution and fundraising data, the user will be required to open only a single file, namely the database that drives the FES information management system. All data and reporting needs will be easily accessible through the user interface, eliminating the need to navigate to various folders on a hard drive to hunt for the right file.

Commercially Available Options

Two commercially available software management systems were reviewed as part of the design phase of this project, namely Quicken Non-Profit and GiftWorks Standard edition. Some features of these software packages are summarized in the table below.

Quicken Premier Non-Profit (\$399 retail)	GiftWorks Standard (\$499 retail)
Track Donations and Pledges Complete IRS 990 Form with one report View program budget summaries	Track Donors and Donations Build mailing lists and send mailings Run reports Manage volunteers Manage events Accept Online Donations

Table 1. Comparison of commercially available software

FES currently use a Quicken product for their accounting needs. The three features specific to Quicken Premier Non-Profit (QPNP) in the table above are in addition to their current capabilities. QPNP does not fully address the needs of FES in that it lacks the ability to manage volunteer and docent information and manage mailing requirements. QPNP essentially tacks on a few functions to their more general Quicken Premier software package. In other words, QPNP is not designed from the ground up to accommodate the needs of a non-profit organization.

GiftWorks, on the other hand, is such a product. After exploring a trial version of GiftWorks Standard, it is clear that a considerable amount of time and resources went into the design and implementation of a software solution for managing all critical

aspects of a non-profit organization. The GiftWorks Standard software package offers several useful features such as the ability to interface with Intuit Quickbooks software and the ability to develop a website donation page that integrates with the GiftWorks software. Of the many useful features that GiftWorks includes in their Standard package, the ability to create SmartLists is the major advantage of this software. SmartLists are essentially user-defined queries that allow the user to filter and access specific data based on any number of criteria. From these lists, users can create reports, mailing lists and labels with a few mouse clicks.

Economic Justification

While GiftWorks is an excellent alternative, the cost of the software is \$499 for the Standard version. At the initial project meeting with FES, the staff indicated that computer equipment and software are usually not eligible items for grant funding. Typically, these needs are met through donations from members or other sponsors. The hours that our project team contributes toward the development of this management system (estimated at more than 450 hours) will be eligible for credit in their next round of grant applications. The standard pay rate for volunteers is \$16 per hour which brings our estimated contribution to over \$7,200 for FES. In short, instead of FES spending a portion of their cash received as donations towards a commercial software package, it makes more business sense from their perspective to employ volunteers to develop a custom software solution instead.

Literature Review: User Interface & Ergonomics

- 1) **Shneiderman, Ben.** *Designing the user interface strategies for effective human-computer-interaction*. Reading, Mass: Addison Wesley Longman, 1998. Print.

Several sections of this sixteen-chapter textbook were referenced in regards to design goals, human factors in design, theory of design, the design process, design specifications, and usability testing. In order to explicitly define what is meant by phrases such as “intuitive user interface” or “user-friendly design” it is helpful to define the exact goals of such a design.

Shneiderman cites the U.S. Military Standard for Human Engineering Design Criteria (1989): “achieve required performance by operator, control and maintenance personnel; minimize skill and personnel requirements and training time; achieve required reliability of personnel-equipment combinations; foster design standardization within and among systems” (p.11). These goals will form the framework and provide the motivation behind all design-related decisions for this project. Shneiderman lists five crucial human factors that must be considered when designing a user interface, namely time to learn, speed of performance, the rate of errors by users, retention over time and subjective satisfaction (p.15). Specifically regarding designing for elderly users, Shneiderman cites the work of Tobias and Christiansen et al. with the recommendation to use “larger fonts, higher display contrast, easier-to-use pointing devices, louder audio tones and simpler command languages” (p. 27).

Regarding error rates, Shneiderman offers a discussion of the model of short-term human memory and how understanding this model can aid in good design. Shneiderman cites George Miller's paper "The magical number seven – plus or minus two" (1956) as the source that identified the capacity of human short-term memory. In this paper, Miller concluded that approximately seven "chunks" of information could be stored in short-term memory for approximately 15 to 30 seconds depending on the subject's familiarity with the material (pps. 354-357). When performing tasks, people employ short-term memory with working memory to process information and for problem solving. Novice users will tend to break tasks into smaller chunks until familiar with the process. In the design of the management system, it is important to minimize the complexity of tasks and minimize any delay inherent in the system so that errors can be eliminated.

Regarding error messages, Shneiderman offers the following guidelines for the end product: be as specific and precise as possible, indicate what the user needs to do, use a positive tone, choose user-centered phrasing, consider multiple levels of messages, maintain consistent grammatical form, and maintain consistent visual format and placement (pps. 372-380).

In order to design a human-computer interface that is intuitive, it is helpful to understand how a user behaves when interacting with computers in general. Shneiderman offers Norman's seven stages of action as an appropriate model which is as follows: Forming the goal, Forming the intention, Specifying the action, Executing

the action, Perceiving the system state, Interpreting the system state, Evaluating the outcome (p. 57). This model is useful in that it anticipates the need for providing appropriate visual cues and feedback while the user is in the process of completing a task.

Regarding designing for our demographic (elderly users, first-time users, novice users), Shneiderman offers the following advice: limit the number of actions to achieve a task to “reduce anxiety, build confidence and gain positive reinforcement”; provide feedback for successfully completing a task; provide specific error messages when an error has been made; provide paper manuals and step-by-step tutorials (p.68).

Shneiderman developed Eight Golden Rules of Interface Design as follows: 1) Strive for consistency, 2) Enable frequent users to use shortcuts, 3) Offer informative feedback, 4) Design dialogs to yield closure, 5) Offer error prevention and simple error handling, 6) Permit easy reversal of actions, 7) Support internal locus of control, 8) Reduce short-term memory load (p.75).

Regarding the design process, Shneiderman notes several issues that require careful consideration based on the user demographic and level of user expertise. The general categories for these issues include: words and icons, screen-layout issues, input and output devices, and action sequences (p.100). For example, issues under words and icons would include terminology used, abbreviations, capitalization, fonts, font sizes, font styles, icons, line thickness, use of color, highlighting, etc. Screen layout issues

would include wording of prompts, feedback, error messages, justification, white space, margins, data entry formats, display formats for lists, etc.

Regarding use of color, Shneiderman offers the following guidelines: use color conservatively, limit the number of colors, recognize the power of color as a coding technique, ensure that color coding supports the task, have color coding appear with minimal user effort, place color coding under user control (when appropriate), design for monochrome first, consider the needs of color-deficient users, use color to help in formatting, be consistent in color coding, be alert to common expectations about color codes, be alert to problems with color pairings, use color changes to indicate status changes, use color in graphic displays for greater information density (pps. 398-403).

Shneiderman's discussion of task-related organization and menu layout in user interface design is particularly helpful. Depending on the breadth and depth of options or functions available to the user, certain designs are more effective than others. For example, a single menu that is permanently available is usually sufficient for an interface with only a few functions. However, as the system becomes more complex, multiple menus such as tree-structured designs become more efficient as long as items are grouped logically, the groups cover all possibilities, the groups are non-overlapping, and use clear terminology distinct from one another (pps. 238-259).

Shneiderman cites the work of Galitz and Brown regarding their work in design guidelines for form fillin, i.e. the process by which forms are filled in with details. The guidelines are summarized as follows: meaningful titles, comprehensible instructions,

logical grouping and sequencing of fields, visually appealing layout, familiar field labels, consistent terminology and abbreviations, visible space and boundaries for data-entry fields, convenient cursor movement, error correction for individual characters and entire fields, error prevention where possible, error messages for unacceptable values, marking optional fields, explanatory messages for fields, completion signal to support user control (pps. 262-267).

2) Raskin, Jef. *The Humane Interface New Directions for Designing Interactive Systems* (ACM Press). New York: Addison-Wesley Professional, 2000. Print.

Regarding interface design in the design cycle, Raskin is critical of recent works that fail to place proper emphasis on early inclusion of interface design issues in the development of a project. He cites the *UML Toolkit* as failing “to recognize that the interface has to be part of the requirements analysis...interface design cannot be postponed until the technical design phase...The place to start the implementation is to list exactly what the user will do to achieve his or her goals and how the system will respond to each user action” (p. 5).

Regarding the limitations of a person’s cognitive consciousness, Raskin discusses the implications of the strongly supported hypothesis that people only have a single locus of attention (p. 24). In this discussion, Raskin points out that the interface should be designed in such a way that the task is the locus of the user’s attention. He states that “systems should be designed to allow users to concentrate on their jobs. Interfaces

should be designed as though the user will be so absorbed in her task that she may not respond to your attempts to communicate with her” (p. 26).

Fitts’ Law and Hick’s Law are discussed as they relate to efficiency and soundness of interface design. “Fitts’ law quantifies the fact that the farther a target is from your current cursor positions or the smaller the target is, the longer it will take you to move the cursor to the target. Hick’s law quantifies the observation that the more choices of a given kind you have, the longer it takes you to come to a decision (p. 93). In his discussion of Macintosh versus Windows operating systems (circa Mac OS 9.0 and Windows 98), he identifies the performance advantages of Macintosh interface layout over the Windows layout. By locating the permanently available menu (File – Edit – View – etc) in an open application along the top boundary of the screen in a Macintosh environment the user can move the mouse any distance beyond that top boundary and the cursor will stop at the intended menu item. In the Windows environment, this same menu is floating below the top boundary which requires the user to precisely stop the cursor on a specific target. This added difficulty in the Windows system navigation method versus the Macintosh navigation method is quantified by Fitts’ law. The equations for Fitts’ law as well as Hick’s law are additional methods of developing quantitative analyses of user interface design that allow for direct comparison of competing designs (pps. 93- 97).

3) **Lindgaard, Gitte. *Usability testing and system evaluation a guide for designing useful computer systems*. London: Chapman & Hall, 1994. Print.**

This textbook gives a complete overview of what is involved with measuring the usability of system. While Lindgaard's treatment of techniques and methods for evaluating usability are the main focus of the text, Lindgaard provides an excellent discussion of the background usability testing, defining key concepts and terminology that provide the foundation for understanding how systems should be designed and evaluated.

Lindgaard begins by providing a brief overview of human-computer interaction (HCI) and discusses its relevance to evaluating computer systems. Lindgaard points out that there are differing opinions regarding the proper utilization of HCI models and research. Some scholars feel that HCI should be a theory-driven discipline separate from other disciplines while others feel that HCI is too complex for any theory to be helpful. Still others believe that in order to make progress in developing the field of HCI, the focus should be placed solely on "case studies based on observations of what users actually do" (p.4). Regardless of how HCI theory is developed, Lindgaard concludes that there are two ways that HCI studies can improve the user experience in computer systems, namely "it can guide a systematic, careful analysis of what information, tools and capabilities people need to achieve their goals" and "it can provide tools and techniques with which to evaluate usability in an effort to remove flaws that hinder smooth interaction between people and computers" (pps.4-5).

Lindgaard notes that while it is clear that integrating HCI tools and principles into systems design is crucial if the goal is improving the user experience, however the exact method of implementing these tools and methods is unclear (pps. 12-13).

However Lindgaard does cite the work of Gould and Lewis as providing the principles that should guide any developer's system design process, namely "early focus on users and tasks, empirical measurement, and iterative design" (p. 13).

Lindgaard also provides a useful way to break the design process into manageable phases: the gearing-up phase, in which the designer learns about related systems, user interface guidelines, and company policies and standards; the initial design phase, in which the needs of the user are gathered, and the designer develops a plan for testing the system; the iterative development phase, in which the system is modified until usability goals are reached; and finally the installation phase, in which the system is introduced to the users, including a training or user manual (pps. 13-14).

Lindgaard discusses a separate feasibility phase as it pertains to usability. "During the feasibility phase a human factors investigation aims to define who the proposed system would be for, what tasks it should support, how it would fit into an existing organizational or other environment, what technology could or should be used, and what the system would cost to develop and install" (p. 15). Lindgaard points out that while including certain features may enhance the system's usability, it is equally important to consider if it is worth the time and cost to build those features into the system since the target user may either abuse those features or not use them at all.

Lindgaard gives a detailed analysis of what is meant by the term “usability” and why usability testing is important. Lindgaard offers definitions based on the idea that usability should account both for the ease in learning the system as well as how easy the system is to use. Shackel’s proposed definition of usability is “the capability in human functional terms to be used easily and effectively by the specified range of users, given specified training and user support, to fulfill the specified range of tasks, within the specified range of environmental scenarios” (p. 19). Lindgaard also cites an alternative definition proposed by Chapanis that states “the usability of a computer is measured by how easily and how effectively it can be used by a specific set of users, given particular kinds of support, to carry out a fixed set of tasks, in a defined set of environments” (p. 20).

Lindgaard notes that while these are not the only definitions of usability, they are relevant to this book since they specifically address usability in terms of measurable dimensions including effectiveness, learnability, flexibility and attitude (p.20). These dimensions of usability should be selected and weighted appropriately to the specific system and target user being studied. These dimensions are defined and quantified as follows (taken from pps.29-31):

Effectiveness – levels of user performance, measured in terms of speed and/or accuracy, in terms of proportion of task(s), proportion of users, or probability of completion of a given task

Flexibility – variations in task-completion strategies supported by a system

Learnability – the ease with which new or occasional users may accomplish certain tasks relative to the beginning of user training

Attitude – user acceptability of the system in question; within acceptable levels of human cost in terms of tiredness, discomfort, frustration and personal effort; usually measured in interviews or surveys enabling response categories to be quantified

Lindgaard identifies the categories of usability defects as follows (taken from pps. 31-33):

Navigation – ease with which users move around the system, within and between modules, layout and understandability of menu options; an understanding of where the user currently is, where he came from and where he is going in a sequence of screens

Screen design and layout – the way information is presented on the screen (spacing, flow of fields, legibility of characters, identification of fields, and format of data to be entered)

Terminology – words, sentences and abbreviations when jargon is used inappropriately or not used where it should be

Feedback – the way the system communicates with users as a result of user actions or about the state of the system

Consistency – the degree to which the system performs in a predictable, well organized and standard fashion

Modality – the state of the system operation that the user selects to perform a particular function (e.g. in some systems, one must be in the INSERT mode to edit displayed text, etc.)

Redundancies – repetitions (do any unnecessary data, fields, or screens that get in the user's way; are there any fields or screens which are never used)

User Control – users' feeling of being in control (are there any actions which are initiated, controlled or paced by the system)

Match with user tasks – the degree to which the system matches tasks as carried out in the current environment and as specified in the task analysis (is every step

in each task consistent with user expectations; is the flow of steps logical; is data taken to all destinations where it is wanted when entered once)

Lindgaard makes the distinction between usability and usefulness in that “usability is related to human performance in the specific task supported by the computer system and to the user’s attitude towards the system...Usefulness has to do with meeting users’ needs by covering the tasks specified in specification documents, and facilitating work through linking tasks that share/depend upon the same data being handled by the same users, by other users who rely on outputs from the system in question, or by other systems employed in the same organization” (p. 20).

Regarding design standards, Lindgaard makes an important point about the difference between hardware design standards and software design standards. Hardware design specifications draw on a wide body of developed knowledge regarding the limitations of the human physiology. Software design standards rely on the field of psychology which is a much less concrete basis on which to formulate standards since much less is known with certainty in this discipline. Furthermore, “it is very hard to translate what we know into something useful” (p. 25). Since standards are often difficult to establish, Lindgaard concludes that it is left to the designer to use their own judgment and to use the previously mentioned principles of “early focus on users and tasks, empirical measurement, and iterative design” (pps. 13, 26-27).

In the remaining chapters of the text, Lindgaard examines specific methods and techniques to develop a system from conception to final installation and support.

Chapter 2 describes methods of gathering user requirements by performing a user needs analysis, developing a user profile using checklists, developing task profiles using task analysis (including discussion of task analysis techniques), defining criteria for success, identifying goals and procedures, identifying physical and environmental constraints, and finally projecting the identified tasks onto the new system (pps. 38-67).

Interview and survey techniques are discussed in Chapter 5. The advantages of surveys over interviews are that they are “easier to administer and process, less likely to embarrass respondents, and are faster to analyze as the major effort is in preparation” (p. 163). The advantages of interviews over surveys are the following (p.163):

- provide access to people who cannot complete questionnaires
- encourage exploration of ideas and suggestions
- offer room for flexibility
- direct interaction with interviewees
- permit deeper questioning
- allow clarification on both sides
- include background and context

When designing questions for interviews, it is important to start with questions that are easy to answer building to more detailed lines of questioning and ending with some easy questions. If the interview is poorly structured, long and tedious, then the respondents may be less likely or less motivated to provide the necessary information (p. 176).

Lindgaard points out that principles of usability should be incorporated into the design and development cycle. Lindgaard recommends that as each task is fully developed in the new system and can be realistically simulated, evaluate the coherence of the task, assess how well the system assists the user in recovering from mistakes or aids with difficult decisions, ensure that any ambiguities or potential pitfalls are well-documented in the help system or user manual, and ensure the system appears and behaves consistently across all tasks (p. 244).

4) **Carroll, John M. "Introduction: Toward a Multidisciplinary Science of Human-Computer Interaction." *HCI models, theories, and frameworks toward a multidisciplinary science*. Amsterdam: Morgan Kaufmann, c2003., 2003. 1-9. Print.**

Carroll offers an overview of the history of the field of human-computer interaction including important concepts developed over its 20 year history. Carroll writes that "HCI was originally a joining of software engineering and human-factors engineering [that] integrated concerns about tools and methods for software development with concerns about verifying the usability of the software produced" (p. 2). In the 1970s before HCI, human-factors engineering did not play a role in system design. The system was designed using what was known as the waterfall development method in which certain capabilities and requirements were not fully considered prior to implementation. These shortcomings were discovered only after the software was proven to be unreliable or ineffective. "Software human factors [were] positioned at the

end of the waterfall, and thus became involved only after fundamental design decisions had been taken" (p.2). By the time human factors were considered, there was little flexibility in the design to make a meaningful impact to user and therefore the only improvements that could be made with regard to human factors were cosmetic.

By the 1990s, HCI had progressed to incorporate many different scientific concepts and empirical methods from several disciplines including the social and behavioral sciences (p.5). This multidisciplinary aspect of HCI has provided system designers with several approaches and methods to choose from when developing systems. However, this wide variety has produced an unintended side-effect, namely fragmentation. "There are too many theories, too many methods, too many application domains, too many systems" (p. 6). This depth and breadth of the HCI field has caused many practitioners to only focus on narrow portions of HCI activity or knowledge. If practitioners of HCI fall into the habit of learning how to manipulate HCI tools and methods without fully understanding the theoretical foundations, mistakes can be made in their application and interpretation of results. Furthermore, due to the lack of active participation in understanding the theoretical background, little progress will be made in developing the theories. Carroll points out that "ironically, because HCI practice has diversified so rapidly and has incorporated so many new professionals, average expertise among practitioners has never been lower" (p. 6).

- 5) Ware, Colin. "Design as Applied Perception." *HCI models, theories, and frameworks toward a multidisciplinary science*. Amsterdam: Morgan Kaufmann, c2003., 2003. 11-26. Print.

In this chapter, Ware discusses how information psychophysics can aid in the development of guidelines for designing displays, i.e. user interfaces. Of particular note regarding display design is the role of pattern perception. "Pattern perception is fundamental to visual intelligence...if we can display data in ways that makes patterns easy to perceive, this will facilitate problem solving" (p.16). Design principles derived from pattern perception theory include (p. 16):

- Proximity: visual entities that are close together are perceptually grouped
- Good Continuity: smoothly continuous lines are perceived more readily than contours that rapidly change direction
- Symmetry: symmetric objects are more readily perceived
- Similarity: similar objects are perceptually grouped
- Common fate: objects that move together are perceptually grouped
- Common region: objects within an enclosed region of space are grouped
- Connectedness: objects connected by continuous contours are perceived as related

- 6) Wickens, Christopher D. *Introduction to human factors engineering*. Upper Saddle River, N.J: Pearson Prentice Hall, 2004. Print. 120-155, 184-217

Introduction to Human Factors Engineering was the textbook for IME 319, Human Factors Engineering. The discussion of controls in chapter 6 as they relate to perception is especially relevant in the design of our user interface. Wickens recommends

maximizing top-down processing by maximizing discriminating features to avoid confusion; using smaller vocabulary in menus, navigation, error messages; and exploiting redundancy if possible using visual and auditory alerts, etc. The discussion of displays in chapter 8 introduces the principle of consistency which indicates that displays should be designed such that consistency is maintained throughout with respect to color and position of common features.

7) Dobrin, Sidney I. *Technical communication in the twenty-first century*. Upper Saddle River, N.J: Pearson Prentice Hall, 2008. Print. 164-215, 464-599

This textbook was used in English 149: Technical Writing for Engineers. While chapter 7 is primarily focused on designing for print, Dobrin discusses the appropriate use of color as a tool for highlighting key elements on a page. These principles translate to user interface design also. For example, warm colors such as red, orange and yellow should be used to draw a reader's attention rather than cool colors like blue and green. Although chapter 16 primarily discusses websites and online environments, many of the principles can be applied to user interface design. Websites allow the reader or user a great deal of flexibility in the order in which pages are browsed, i.e. the flow of information is not necessarily linear. Similarly, when launching a custom-designed database in Microsoft Access, the user interface will provide the user with several navigation options from the default screen. For this reason, the database can be viewed as a non-linear application and as such, it is important that the navigation experience is

logical and efficient. Dobrin lists several useful principles throughout chapter 16 that are relevant to user interface design such as:

- Be sure that users always know where they are within the (application) and what options they have
- Design consistent navigation elements, clearly identify all navigation links
- Ensure the user can quickly return to the default screen
- Verify that all navigational elements take the user to the intended destination
- Be sure that visuals do not overwhelm; clearly label all visuals; icons should be easily interpreted
- Ensure file size of graphical elements does not slow performance
- Use clear and contrasting colors, particularly in text.

8) **Eberts, R. (1994). *User Interface Design*. Prentice Hall.**

In this book, Eberts presents conceptual approaches, experimental methodology, theories and models needed to design good interfaces. The majority of the book covers experimental methodologies including four approaches to human-computer interaction, namely the empirical, cognitive, predictive modeling, and anthropomorphic approaches.

Under the empirical approach, the interface designer would be required to design, implement, and analyze the results from empirical studies. For the cognitive approach, theories in cognitive science and cognitive psychology are applied to the human-computer interface to make the processing of information by both the human and the computer easier and more efficient. The purpose of the predictive modeling

approach is to try to predict performance of humans interacting with computers. Lastly, under the anthropomorphic approach, the designer uses the process of human-human communication as a model for human-computer interaction. Using one or all of these approaches to our project will help us in designing our database and creating an easy to use interface.

9) Te'eni, Dov, Jane M. Carey, and Zhang, Ping. *Human-Computer Interaction Developing Effective Organizational Information Systems*. New York: Wiley, 2006. Print. 193-220

In chapter 8, Te'eni provides a thorough discussion of design principles and design guidelines. Design principles are defined as high-level design goals that apply regardless of the specific application. Design guidelines are defined as specific rules that are context-sensitive and depend on the task. The design guidelines are the means by which the design principles are achieved. These principles and guidelines are summarized as follows (p. 195):

Design Principles

- Improve users' task performance
- Strive for fit between the information representation needed and presented
- Direct and constrain user affordances to capture real-world knowledge
- Design for error
- Enable an enjoyable and satisfying interaction
- Promote trust

- Support diversity of users

Design Guidelines

- Maintain consistent interaction
- Provide the user with control over the interaction, supported by feedback
- Use metaphors
- Use direct manipulation
- Design aesthetic interfaces

10) MacDonald, Matthew. *Access 2007 The Missing Manual*. New York: Pogue, 2006. Print.

This reference manual was used as a supplement to the Microsoft Access knowledge gained from IME 312 Data Management and System Design.

Design & Methodology: User Interface & Ergonomics

Lindgaard's recommended strategy for system design and implementation was applied to the user interface design portion of the FES information management system project. As mentioned in the literature review, the phases involved include the gearing up phase, initial design phase, iterative development phase and the installation phase.

Gearing Up

In the gearing up phase, commercial software packages were reviewed for features offered and the navigation systems implemented. As mentioned above in the Background section, the GiftWorks software is a feature-rich application developed specifically for the needs of any non-profit organization. Given that this project team consists of only three members, limited resources and limited time, the scope of this project cannot include all of the features that the GiftWorks software has to offer. However, GiftWorks has provided the inspiration for which features were essential to include in the FES management system and how navigation should function.

Design principles and guidelines were gathered during the literature review phase of the project. The recommendations of the authors discussed in the literature review section, especially Shneiderman, Raskin, Lindgaard and Te'eni, will be employed throughout the design process and will be discussed further in the Iterative Development section below.

Initial Design

In the initial design phase, user requirements were gathered through a group interview that included the three Cal Poly FES project teammates, the FES secretary, the FES database administrator, and the FES fundraising coordinator. Prior to the meeting, a list of questions was prepared (see Appendix I.1) to aid in clarifying the current FES workflows, to identify the capabilities required of the information management system, and to provide opportunities for the FES staff to participate in the design process. The direct result of this interview process was a list of specific issues captured in the form of Meeting Minutes (see Appendix I.2) that needed to be addressed in our system. A list of action items was generated which formed the basis of our work breakdown structure going forward (see Appendix I.3). In short, the overall goal of this project is to consolidate workflows into a single information management system where all essential FES business functions can be easily accessed. Expected improvements over the existing system included the following:

- Improve quality of data entry by implementing constraints on data fields to ensure consistency
- Include data validation in the workflow to ensure the minimum amount of necessary information is being captured
- Improve the current workflows so that the need to manually search for and add specific individuals to specific reports/mailings is eliminated

- Improve the current reporting capabilities, e.g. membership, docent and contribution tracking
- Develop a workflow for capturing and reporting fundraising event data

Iterative Development

In the iterative development phase, the system is developed and modified through several stages in order to meet usability goals. This section will also include discussion of alternative designs, design justifications and screenshots to illustrate key elements of design.

Layout

As mentioned in the literature review section, Shneiderman cites design goals that include reducing the time required to learn the system and reducing the rate of errors by users. With these design goals in mind, the initial layout was designed to emulate a common “framed” website structure with a permanently available navigation menu across the top header area with the main content displayed directly below in a “target frame.” The use of a familiar design, such as a common website layout, would decrease the amount of time needed to learn how to navigate the system. A permanently available navigation menu was placed horizontally across the top so that the majority of the screen real estate could be used for displaying information. This design choice is consistent with Ware’s discussion of pattern perception in that it exhibits appropriate use of proximity, symmetry, similarity, common region and

connectedness. As shown in Figure 2 below, rectangles are used to divide the interface into navigational elements and a content display area.



Figure 2. Initial layout concept using high contrast complementary colors

It is important to note that the current FES workstation monitor is a 4:3 aspect ratio screen at a resolution of 1280 x 1024 pixels. The overall dimensions of the layout shown in Figure 2 were chosen based on this current resolution and monitor setup of the FES workstation. The interface was designed such that all content would be displayed below the main navigation menu. The overall interface dimensions were chosen to allow a 100% viewable interface with a window size at 70% of the horizontal maximum at a 1280 x 1024 resolution. In other words, the Microsoft Access application does not need to be maximized in order to view the entire contents of the interface. Since this interface only requires a window size of 70% of the horizontal maximum, the user can multi-task more efficiently by simply selecting the desired window/application positioned outside the interface window.

Wickens among others suggests that displays be designed so that elements appear consistent. For this reason, the dimensions of the interface were designed at a fixed height and width. There are freeware modules available online, such as Access Form Resizer 2.6, that will scale fonts and forms to match the user selected window size. The problem with this type of module is that it may allow the user to scale the window size too small, making fonts illegible or navigation difficult due to decreased target size. Due to time constraints and the amount of effort involved with researching and developing code to arrive at an ergonomically-sound scalable version of the interface, the decision was made to fix (hold constant) the dimensions at a pre-defined value based on the current FES screen resolution. These fixed dimensions were divided into an aesthetic distribution of space between navigational elements, main content display area, and aesthetics (border size, margin size, logo size, font size). The exact vertical dimensions required were determined throughout development, adjusting the height of the main content area and header area as needed to accommodate certain forms requiring more vertical screen real estate. The final layout requires approximately 90% of the maximum vertical window height with the 70% horizontal constraint remaining unchanged from the initial layout shown in Figure 2.

The importance of cursor travel distance and ease of target location are thoroughly addressed in Raskin's discussion of Fitts' law and the Macintosh user interface. Briefly, Raskin points out that a permanently available menu at the top of the screen is ideal since the user is free to move the cursor any vertical distance beyond the

target and the selection can still be made. This strategy of menu placement reduces the amount of accuracy required and increases the overall efficiency of the interface design. Ideally these concepts would be incorporated into the final design of the FES interface. However, due to a combination of the limitations in Microsoft Access, the programming expertise available at the time of development, and the time constraints involved, these concepts could not be incorporated in any iterations of the design process. Instead, these issues were addressed by maximizing the target size, clarifying the target area by using borders, improving on the implementation of Ware's pattern perception principles and implementing a color coding scheme. For example, as shown in Figure 3, related areas such as the "Non-Cash" section of the Contributions page are placed in a rectangular group delineated by a contrasting white border. Navigational elements are also bordered in the main navigation menu as well as in the main content display area below. The target areas were maximized with respect to the available screen real estate, determined by the pre-defined fixed dimensions and overall effect on aesthetic balance. Visual feedback was provided in the form of a cursor change on hovering over a navigational element (Figure 5). An additional Home section was created. The Home section loads when the system is launched and provides a "Quick Links" menu (Figure 4) to allow for immediate access to the most common tasks.

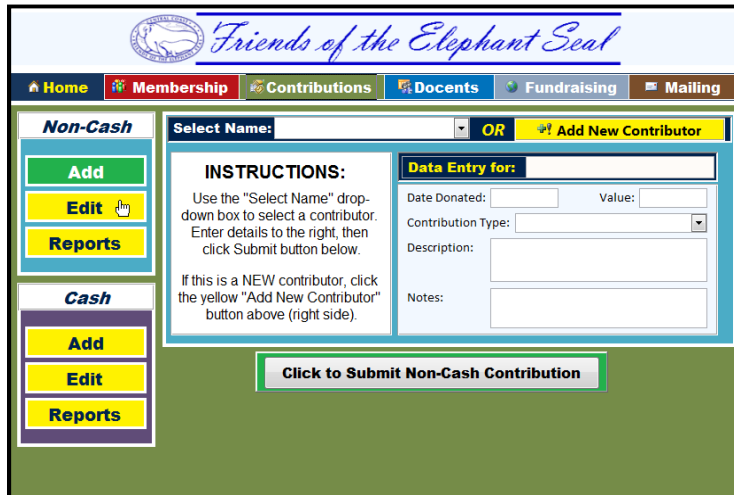


Figure 3. Maximized target area and color coded sections

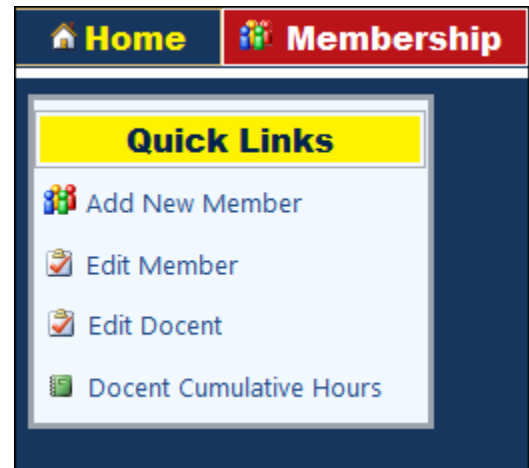


Figure 4. Immediate access to common tasks on start



Figure 5. Cursor changes from pointer to hand on hover

Color Coding

Shneiderman outlines some special considerations when designing for elderly users, specifically the use of larger fonts and high contrast color schemes in display elements. Large sans-serif fonts were used throughout the interface in appropriate contrast to their respective background colors. Following the design guidelines of Te'eni

in designing aesthetic user interfaces along with Dobrin's recommended use of color and navigational elements, the initial layout shown in Figure 2 was developed. The FES logo was placed at the very top of the interface for aesthetics. The high contrast color scheme shown in Figure 2 uses complementary colors, specifically yellow and dark blue. After further iterations, this simple color scheme evolved to include a more comprehensive color coding system that provided better feedback on current location within the system as well as improved identification of key navigation elements. As shown by arrow 3 of Figure 6, the background colors in the main content frame are identical to their corresponding menu main navigation button, in this case, the Membership section.



Figure 6. Improved color coding scheme and navigational elements

Navigational elements below the permanently available navigation menu in the header are color coded using a cool color (green) and a warm color (yellow). Dobrin notes that

warm colors draw attention while cooler colors can be used to deemphasize. This color scheme was chosen to indicate the availability of further navigation choices within a specific section of the system as well as to indicate current location. For example, as shown in Figure 6, the green background color of the “Add” button (arrow 1) indicates the user is currently in the section for Adding a Non-Cash Contribution. The yellow background colors of buttons below the permanently available navigation menu (Figure 6, arrow 2) indicate additional navigational links within the current location of the system.

Data Validation

In order to ensure that the minimum amount of necessary information is captured at the time of entry, data validation was coded in Visual Basic for specific fields or buttons. In addition to verifying that the type of information entered is of the appropriate type via input masks, coding was included in the form of If-Then statements to prevent invalid selections or submittals from being processed. For example in the Membership section, fields pertaining to mailing address cannot be empty if the contact preference selected is “Letter.” Similarly, if “Email” is selected as a preferred method of contact, there must be a valid email address in the designated field. These contact preference elements are designed as checkboxes which are binary values. These values are verified via Visual Basic code once the value is selected and again once the user presses the “Submit” button at the bottom of the form. This type of data

validation is employed throughout the information management system. An example of this Visual Basic coding can be found in Appendix I.5 with elements requiring data validation highlighted in yellow.

Design Challenges

The programming phase of the interface design was challenging due to limited experience working with Microsoft Access and an incomplete understanding of its capabilities and limitations. The initial plan was to design separate forms for each section. In other words, one form would contain all the required fields and functions for the Membership section of the information management system, a separate form would contain all of the required fields and functions for the Contributions section, and so forth. However, due to the requirements of each section, this approach cannot effectively be implemented with the current level of programming knowledge and time constraints involved. While it may be possible for expert users to achieve this design structure, an alternative feasible approach was developed instead. In short, every navigational element in the interface loads a unique form. For example, in reference to Figure 6, instead of creating six forms in Access (i.e. one each for Home, Membership, Docents, Contributions, Fundraising, and Mailing), a total of forty-three forms were required. This added a significant amount of work to the debugging process which will be described in detail in a later section.

In professional graphics layout programs like QuarkXpress and Adobe InDesign, the designer has the ability to place different design elements in containers on separate layers. These elements can be shown or hidden by clicking the appropriate icon in the tools palette that displays or hides the layer containing the desired element. This feature makes finding, grouping, and editing specific elements much easier. Unfortunately, the ability to layer design elements is not readily available in Access. As a result, the design process became very complicated, time-consuming and susceptible to bugs. The problems created by the absence of layering were exposed early in the design phase when attempting to fit all the necessary elements within the fixed dimensions of the interface while maintaining a consistent location for user-requested content (i.e. below the permanently available navigation menu.)

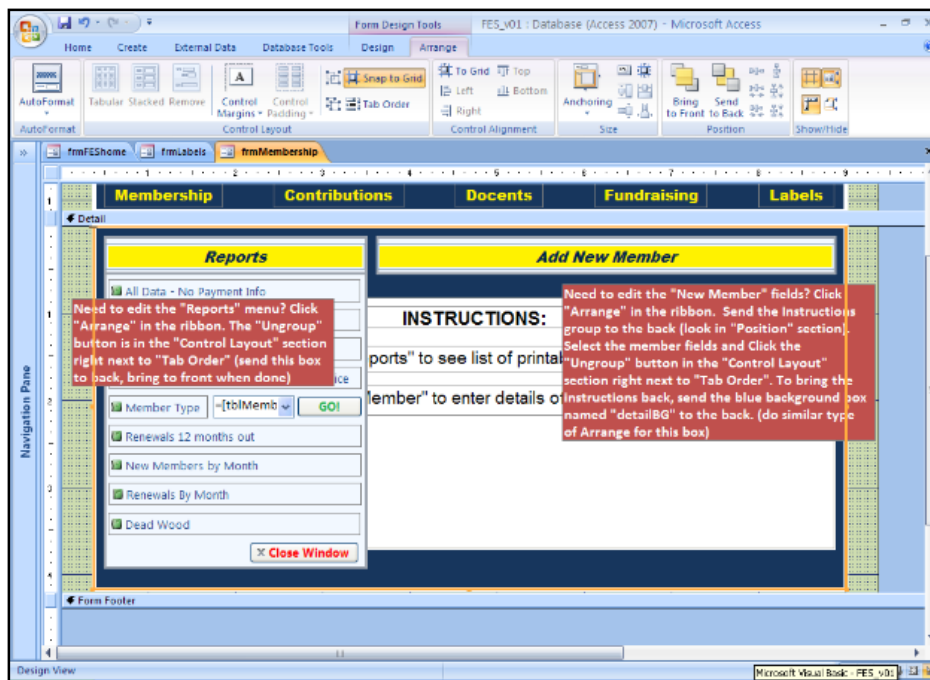


Figure 7. Screenshot illustrating extensive notes to project teammates

Figure 7 shows an early iteration of the Membership section of the FES information management system. After clicking the “Membership” link in the top header navigation bar, the membership section would load with yellow navigation bars in the Detail section with the “Instructions” showing on the initial form load. Clicking the yellow “Reports” button would make the Reports menu visible and hide the white box containing instructions. Similarly, clicking the “Add New Member” button would hide the instructions and show the member fields for editing. This effect was achieved using Visual Basic (VB) code.

The problem with this method of design is that all of the elements on the page cannot be displayed in design view at the same time without the use of a separating graphical element, such as an opaque box, behind which elements could be hidden in Design view. For example, in Figure 7, the white box containing instructions for the Membership section provides a convenient element that can be used to hide the “Add New Member” data fields by placing it in front of the grouped “Add New Member” data fields. If related elements are not grouped and hidden behind convenient elements, the Design view in Access will look like Figure 8 below.

Figure 8. Illustration of problem created by inability to control design through layering of elements

The “Add New Member” fields are those floating above the “Reports” buttons, instruction fields and background elements. The “Add New Member” fields must be grouped to allow the designer to use the “Send to Back” and “Bring to Front” commands in the Position menu of Design view.

Grouping and rearranging behind opaque elements did solve the initial problem of keeping all Membership elements on a single form. However, the process of grouping and rearranging added complexity to the editing process. Furthermore, ungrouping the “Add New Member” elements shown in Figure 8 to allow for easier selection of individual elements would create an additional problem, namely how to conveniently regroup these related elements. Simply dragging a selection container would not work because it would select all elements contained under the selection container. Tedious de-selection of each individual unwanted “Reports” element and background element would be required in order to successfully regroup the “Add New Member” elements.

Since the user interface designer is the only teammate that fully understands how the elements are designed and arranged within the form, the user interface designer would need to spend a considerable amount of time developing commentaries placed in comment boxes to communicate to project teammates how the form is designed, which elements are grouped and how to locate and select these elements. Figure 7 shows the red comment boxes required for the Membership section overlaying the detail section of the form. This overlaying of comment boxes further clutters the Design view and also complicates the selection process.

In addition to the complications of grouping, ungrouping and selecting specific elements for editing, this “show-hide” method of layout requires extensive coding to show and hide the correct elements on the page, depending on the navigation button that the user clicks. A code excerpt required for clicking the “Report” button is shown in Appendix I.4. It is important to note that only two navigation options are available in the Membership section in this iteration of the design. As the design becomes more complex and more navigation options are available (see Appendix II.5, Fundraising), the amount of coding required for showing and hiding elements increases considerably. Furthermore, the task of successfully grouping and hiding related elements within the confines of the fixed dimensions of the interface becomes very difficult if not impossible. The time required to explain the intricacies of a complex page (e.g. Contributions) to project teammates would be immense.

Instead of going forward with the tedious “show-hide” approach, each navigational element would necessarily require the development of a separate form. In other words, if the user were in the Docents section, clicking the Membership button in the header would close the current Docents section form and open a separate form with the navigational elements specific to the Membership form, namely “Member Reports,” “Add New Member,” and “Edit Member.” A section with three navigation options requires four forms, as shown in Figure 9.

The figure displays four distinct web forms for the 'Friends of the Elephant Seal' membership section, arranged in a 2x2 grid. Each form shares a common header with navigation links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. The top-left form provides instructions for the 'Member Reports', 'Add New Member', and 'Edit Member' buttons. The top-right form shows the same navigation options alongside a list of report categories and a 'GO!' button. The bottom-left form is the 'Add New Member' form, which includes a hint and a comprehensive set of input fields for member information. The bottom-right form is the 'Edit Member' form, which includes search and select dropdowns for member identification and input fields for updates, along with a 'DELETE MEMBER' button.

Figure 9. Four forms required for membership section

Each form, in essence, serves as a unique “user screen.” While this may add to the file size of the database in terms of hard drive space occupied, this decision makes the

editing process much easier. However, this decision has the unfortunate side effect of making the process of debugging the interface an enormous challenge.

Debugging

As mentioned above, clicking on a navigation element closes the current form and opens the target form. Therefore, only one form should be open at any time except in special cases such as capturing additional that a fundraising event attendee purchased. The process of debugging the interface to ensure that only one form is open at any time is an extremely tedious process. For example, in Figure 9, there are 6 main navigational elements in the permanently available navigation menu in the header section, 3 navigational elements specific to the Membership section. When clicking “Member Reports,” every navigational element in the header section must be recoded so that the “Member Reports” section is closed and the target form is opened. Similarly, every navigational element specific to the Membership section must be recoded. This task is especially tedious for sections such as the Contributions section and the Fundraising section, which each contain 6 section-specific navigational elements.

Installation

Ideally, the installation phase of the user interface and ergonomics portion of the project would have consisted of passing the finished user interface to the project teammates for full development of all required queries and reports. However, due to time constraints, as iterations of the user interface were developed, they were provided

to project teammates to enable concurrent development and testing of back-end queries and reports driven by the user interface navigational elements. For example, once the Membership section was completed, that design iteration was forwarded to project teammates so they could begin designing the necessary tables, queries and reports required in that section.

Results: User Interface & Ergonomics

This results section contains subjective evaluations of the user interface and ergonomics design phase. The quantitative results are thoroughly addressed by the project teammate responsible for software testing (i.e. time studies data).

As a result of the design phase, the user interface achieved the requirements outlined in the Initial Design section of this report. This interface effectively consolidated workflows requiring creation and maintenance of several separate files into a single file. Through data validation, the quality of data entry was improved by implementing constraints on data fields to ensure consistency and ensuring that the correct information was being gathered at the data entry phase. The interface provides the mechanism by which all requested reporting can be produced with a single click of a navigation element. Finally, the Fundraising section allows for accurate capture and reporting of all requested data. Screenshots of all unique screens can be found in Appendix 2.

The design is effective from the user's perspective. From a database administrator's perspective, the system will be difficult to manage due to the number of forms involved and the amount of manual coding required to implement seemingly simple changes. The major limiting factor of this system from the user's perspective is the inability to create SmartLists or user-defined queries. While it is possible to include this feature, the time constraints of the project ultimately prevented development of such a feature.

Conclusion: User Interface & Ergonomics

In the user interface and ergonomics portion of the project, the problem that was addressed was the lack of a user interface. The objective was to design a user-friendly ergonomic interface in Microsoft Access 2007 that provided easy access to all essential business functions. The solution was approached in manageable stages: gearing up, initial design, iterative development, and installation. The most significant result of this portion of the project is that all necessary workflows are consolidated into a single Access file. The input/output mechanism of these workflows can be accessed through a simple web-styled color-coded interface.

Recommendations: User Interface & Ergonomics

The most important recommendation for further development of this interface would be to research design methods that would reduce the number of forms required. The current method of developing a separate form for each “unique user screen” is tedious, prone to error, and requires extensive debugging.

Future iterations of design would include the following:

- ability to create user-defined queries or SmartLists similar to those available in GiftWorks
- user-defined preferences such as font size and color scheme
- on launch, ability to return the user to a previous or most recent task/screen
- include audible feedback
- more developed on-screen help system and/or context-sensitive help

Appendix I.1

Interview Questions

What do you like most about the current system?

What do you like least about the current system?

How would you like the navigation to work?

Would you like all reports to be selected from one screen?

What are your most common reports?

Are there any reports that you need that you cannot currently produce from the current system?

How would you like the reports formatted?

Is there additional information that you would like to capture about donors, individuals, organizations?

What additional functionality would you like to see in the new?

Are the current fields/labels in your system adequate/appropriate?

Is there a need to track multiple addresses? Seasonal addresses?

Appendix I.2

Meeting Minutes - 11/6/2009

Organization: Friends of the Elephant Seal

Purpose of Meeting: Gather details on business practices and corresponding requirements of database

Meeting Minutes: Rob

Date/Time: November 6, 2009 @ 3pm

Attendees: Matt, Rob, Jeff, Judy (FES Secretary), Diana (database user), Charmaine (Fundraising)

Time Adjourned: 4:30pm

- Membership Tracking/Reporting Issues
 - Need to track households
 - Figure out what to do if donor does not submit a first name and last name, e.g only give a Household name
 - Lifetime members should NOT be included in the renewal mailing list
 - Need to fix their current problem with the “Checkbox” that captures membership status as “NEW”
 - Instead of the “NEW” checkbox that returns a query based on true/false, we should redesign the “New Member” query by
 - Lifetime members should be included in all newsletters and holiday card mailing lists
 - Their current setup requires the secretary to manually add the lifetime members to this mailing list
 - Annual memberships are by calendar month (e.g. October through October, not specific day of month)
 - Members are considered INACTIVE after 18 months have passed since initial sign-up or most recent renewal
 - Renewal notices are sent one month prior to membership expiration
 - No additional notices are sent after membership lapses
 - FES would like to include a way to send reminder to renew after membership lapses, (perhaps 6 months after lapse)
 - Need a field to capture a member preference to contact by email, letter, both or none
 - in case a member gets tired of receiving emails/letters, they can reply and request to be removed from the mailing list (email and/or regular mail)

- Need to include way to solicit preference to “GO PAPERLESS”
 - Capture email address
 - Ensure privacy will be protected (email will not be sold or shared with third party)
- Docent Tracking/Reporting Issues
 - Need ability to track docents that are NOT members so they are EXCLUDED from receiving a membership renewal notice
 - Need standard pay rates for types of work performed
 - Need categories for volunteer type of work performed
 - Need a field to capture a member preference to contact by email, letter, both or none
 - in case a member gets tired of receiving emails/letters, they can reply and request to be removed from the mailing list (email and/or regular mail)
- Donation Tracking/Reporting Issues
 - Currently, there is no way to capture data on individual/organization that donates more than the amount “checked” on the donation form
 - § Need to capture this data so that a special letter can be sent in thanks of contributions above and beyond the predetermined donation levels.
 - Possibly design mail merge format so that the “additional amount donated” is automatically populated into the letter.
 - We will need a field to capture this amount
 - Need a standardized list of donation type from Diana
 - § Jeff has initial list that Diana sketched during meeting
- Fundraising Issues
 - Currently, fundraising is tracked in standalone Excel files
 - Currently, not all pertinent data is being captured
 - Donations made for fundraising purposes are tracked SEPARATELY from other cash and non-cash donations
 - Need a way to track MULTIPLE EVENTS
 - Need to track expenses for these events
 - Need to associate specific items/services donated to their specific events
 - Need a way to track the item and its ACTUAL VALUE (Claimed Value)
 - Need a way to track the AMOUNT RECEIVED AT AUCTION (Auction Value)

- their Excel report also lists NUMBER OF BIDS
 - maybe we should be able to query "Most Popular Items" so they can request those types of products services at the next event
 - on their Excel file under "# of Bids" and "Winning Bid" it looks like they tried to capture the reason why something was not sold, e.g. possibly due to reserve not met
 - maybe we should include a field for "Reserve Price" and capture if "Reserve Not Met" and "Max Bid"
 - in case FES receives the same item at another event, they can inform the donor of its history (previous reserve price, max bid) so donor can decide if they want to lower the reserve or choose a different item
 - Need to track ATTENDEES
 - Need to track VENDORS / SPONSORS
 - Track what product or service they provide
 - Track value of product or service donated
 - Categorize product or service donated
 - Create a list of POTENTIAL DONORS/SPONSORS
 - Need to track TICKET PURCHASERS
 - Need to track AUCTION ITEM PURCHASERS
 - Need to generate mailing list for fundraising sponsors
-
- Other Issues
 - No login or password protection requested
 - More than likely, docents will not be entering information into database, only Diana
 - Need to design an improved docent tracking sheet
 - Needs to be quick and easy to fill out
 - Ideally would capture the type of volunteer work performed
 - We will need standardized category list
 - Need to verify that their ISP will allow bulk emailing capability
 - their previous attempt to mass email was unsuccessful (many did not receive)
 - their current ISP is CableRocket.com, a Canadian company?
 - Need to research their email policy
 - if necessary, we can create a Gmail account and use Microsoft Outlook to send out their bulk email from that Gmail account

- friends.elephant.seal@gmail.com is currently available
- ACTION ITEMS AND GENERAL PLANS FOR HOW TO PROCEED
 - Items highlighted above in red require our immediate attention in order to proceed with design (ALL)
 - Collaborate and develop work breakdown structure and time estimates for project timeline (ALL)
 - Create Microsoft Project Gantt chart for WBS (Rob)
 - Clean up the FES raw data (ALL; divide data into thirds)
 - delete empty records, create household field for records with Family Name only (ALL)
 - Begin importing non-cash donations Excel data into Access (Matt)
 - Begin importing cash donations Excel data into Access (Rob)
 - Begin importing fundraising Excel data into Access (Jeff)
 - Sketch out initial E-R diagram (Matt)
 - Analyze relationships and ensure appropriate tables are Third Normal Form (ALL)
 - Create a list of all potential reports needed and their corresponding queries (ALL)
 - Contact Judy/Diana to obtain final category list for donation type (Jeff)
 - Contact Judy/Diana to obtain final category list for volunteer work type performed (Jeff)
 - Contact Judy/Diana to obtain list of standard pay rates for volunteer work type performed (Jeff)
 - Research their current ISP bulk email capabilities (Rob)
 - suggest that Judy draft a letter advertising to their membership that FES desires to "go green", use less paper, and request email addresses (if available) from all members/donors that receive printed mail; this would save them THOUSANDS of dollars in printing costs (Rob)
 - Research possibility of UGS donating services and printing new membership application forms (Rob)
 - determine if there is an immediate need for this service; contact Judy for current on-hand supply of membership forms (Rob)
 - if current digital file is unavailable, design new membership forms in Adobe InDesign and/or QuarkXpress for their future use to facilitate printing (Rob)
 - Design new Docent Tracking Sheet (Matt)
 - be sure to capture type of work performed; must be on a single sheet (Matt)

- Once raw data cleanup is done, import all raw data into tables in Access (ALL; divide in thirds)
- Obtain a final list of all possible reports and capabilities they will need (Jeff)
- Prepare a finalized scope for our design and a list of deliverables for this project (ALL)
- Obtain signatures from FES Staff for approval to proceed as outlined in the scope and list of deliverables (ALL)
- Complete query design phase (ALL - exact distribution of workload TBD)
- Complete form and report design phase (ALL - exact distribution of workload TBD)
- Complete integration with Microsoft Outlook, Word and Excel (ALL - exact distribution of workload TBD)
- Design user interface (ALL - exact distribution of workload TBD)
- Testing & Debugging phase (ALL - exact distribution of workload TBD)
- Documentation and User Manual design (ALL - exact distribution of workload TBD)
 - Develop relational algebra for all required queries (ALL)
 - Develop E-R Diagram in Visio/Photoshop/Illustrator (Rob)
 - Screenshots and Step-By-Step Tutorials for all functions of database (ALL)
 - Print and bound at PolyPrints or Kinko's (ALL)
- Present to IME department and FES staff (ALL)

Appendix I.3

Excerpt from MS Project WBS

Non-profit Management System Design & Implementation	164.5 days
Lit Review due week 7	28 days
Intro and Background due week 10	29 days
Create list of all reports and necessary queries	1 day
Contact Judy/Diana for final category lists	1 day
Contact Judy/Diana to confirm final list of queries/reports/capabilities	1 day
Submit Intro, Background, lit review, methodology	5 days
Gather Customer Deliverables	10 days
Create list of all reports and necessary queries	4 days
Design Tables	7 days
Develop Queries	7 days
Clean up FES raw data	8 days
Sketch E-R diagram	1 day
Present Design Plan to FES	1 day
Revise tables/queries as needed	4 days
Prepare finalized scope, list of deliverables	3 days
Obtain signatures from FES for approval to proceed as planned	1 day
Ensure 3NF in appropriate tables	3 days
Research current ISP for bulk email restrictions	1 day
Design new docent tracking sheet	3 days
Import Data	5 days
MS Access Report design phase	40 days
Obtain sample form letters, graphs, print materials for integration tasks	5 days
Integration with MS Office applications	6 days
Testing, Debugging, Modification, Improvement	24 days
Draft due Week 9 to tech advisor	0 days
Make revisions and edits	7 days
Print/bind final version, unbound single-sided, copy of abstract, submit online	1 day
Final Report Due	0 days

Appendix I.4

“Show-Hide” code

```

Private Sub cmdMinimizeReportsMenu_Click()
Me.cmdMembership.SetFocus
'show the Instructions
Me.LblInstructionsLine1.Visible = True
Me.LblInstructionsLine2.Visible = True
Me.LblInstructionsMembership.Visible = True
Me.boxInstructionsBG.Visible = True
'show the small box behind Reports button when closing Reports menu
Me.boxReportsSmallBG.Visible = True
'hide the Reports menu
Me.boxReportsBG.Visible = False
Me.cmdAllDataNoPayment.Visible = False
Me.cmdAllDataLastRenewal.Visible = False
Me.cmdCurrentMembers18mo.Visible = False
Me.cmdCurrentMembersYearlyNotice.Visible = False
Me.lblMemberType.Visible = False
Me.cboMemberType.Visible = False
Me.cmdReportByMemberType.Visible = False
Me.cmdRenewals12out.Visible = False
Me.cmdNewMembersByMonth.Visible = False
Me.cmdRenewalsByMonth.Visible = False
Me.CmdDeadWood.Visible = False
Me.cmdMinimizeReportsMenu.Visible = False
End Sub
Private Sub cmdShowReportsMenu_Click()
'hide the Instructions
Me.LblInstructionsLine1.Visible = False
Me.LblInstructionsLine2.Visible = False
Me.LblInstructionsMembership.Visible = False
Me.boxInstructionsBG.Visible = False
'hide the small box behind Reports button on initial form load
Me.boxReportsSmallBG.Visible = False
'show the Reports menu
Me.boxReportsBG.Visible = True
Me.cmdAllDataNoPayment.Visible = True
Me.cmdAllDataLastRenewal.Visible = True
Me.cmdCurrentMembers18mo.Visible = True
Me.cmdCurrentMembersYearlyNotice.Visible = True
Me.lblMemberType.Visible = True
Me.cboMemberType.Visible = True
Me.cmdReportByMemberType.Visible = True
Me.cmdRenewals12out.Visible = True
Me.cmdNewMembersByMonth.Visible = True
Me.cmdRenewalsByMonth.Visible = True
Me.CmdDeadWood.Visible = True
Me.cmdMinimizeReportsMenu.Visible = True
'Me.ActiveControl.SetFocus
End Sub

```

Appendix I.5

Membership Section Code

```
Option Compare Database
Private Sub AddAsDocent_GotFocus()
Me.MouseOverTip.FontSize = 11
Me.MouseOverTip.Caption = "Check this box if the member is also a Docent."
End Sub

Private Sub AddAsDocent_Click()
If Me.AddAsDocent.Value = True Then
Me.cboDocentCategory.Visible = True
Me.label_DocentCategory.Visible = True
Me.ClassYear.Visible = True
Me.ClassYear_Label.Visible = True
Me.Status_Label.Visible = True
Me.cboStatus.Visible = True
Me.cboDocentCategory.SetFocus
Else
If Me.AddAsDocent.Value = False Then
Me.cboDocentCategory.Visible = False
Me.label_DocentCategory.Visible = False
Me.ClassYear.Visible = False
Me.ClassYear_Label.Visible = False
Me.Status_Label.Visible = False
Me.cboStatus.Visible = False
End If
End If
End Sub

Private Sub ClassYear_GotFocus()
Me.MouseOverTip.FontSize = 9
Me.MouseOverTip.Caption = "Enter year docent training completed. Edit Member or Edit Docent options allows
entry at later time."
End Sub

Private Sub cboDocentCategory_GotFocus()
Me.MouseOverTip.FontSize = 11
Me.MouseOverTip.Caption = "Please select a Docent Category for this member."
End Sub

Private Sub cboStatus_GotFocus()
Me.MouseOverTip.FontSize = 11
Me.MouseOverTip.Caption = "Please select a docent status."
End Sub

Private Sub cboMemberType_GotFocus()
Me.MouseOverTip.FontSize = 9
```

```
Me.MouseOverTip.Caption = "Type: Contributor($25/yr), Sponsor($50/yr), Business($100/yr), Benefactor($100/yr),  
Lifetime($1000) "  
End Sub
```

```
Private Sub FirstName_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter First Name or Household Name"  
End Sub
```

```
Private Sub Form_Load()  
Me.Form.Refresh  
Me.cboDocentCategory.Visible = False  
Me.label_DocentCategory.Visible = False  
Me.ClassYear.Visible = False  
Me.ClassYear_Label.Visible = False  
Me.Status_Label.Visible = False  
Me.cboStatus.Visible = False  
Me.cmdMembership.SetFocus  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "This box provides brief instructions/details for each data field."  
End Sub
```

```
Private Sub LastName_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Last Name"  
End Sub
```

```
Private Sub OrganizationName_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Organization Name"  
End Sub
```

```
Private Sub Address_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Street Address or Mailing Address"  
End Sub
```

```
Private Sub City_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter City"  
End Sub
```

```
Private Sub preferEmail_Click()
```

```
'this if statement allows the preferEmail box to be unchecked  
'while still allowing for an empty email address field  
'e.g. if the member previously preferred email and now does not  
'no error message will result when unchecking the box
```

```
If Me.preferEmail.Value = False Then  
Exit Sub
```

```
Else
```

```
'if the checkbox was initially unchecked (e.g. on page load) then
```

```
'check if email address was entered  
'setfocus on the email address field
```

```
    If IsNull(Me.EmailAddress.Value) Then  
        MsgBox ("Please enter a valid email address in the Email Address Field.")  
        Me.EmailAddress.SetFocus  
    End If
```

```
End If
```

```
End Sub
```

```
Private Sub preferPhone_Click()
```

```
'this if statement allows the preferPhone box to be unchecked  
'while still allowing for an empty phone number fields  
'e.g. if the member previously preferred phone and now does not  
'no error message will result when unchecking the box
```

```
If Me.preferPhone.Value = False Then  
Exit Sub
```

```
Else
```

```
'check if any phone number has been entered
```

```
    If IsNull(Me.HomePhone.Value) Then  
        If IsNull(Me.WorkPhone.Value) Then  
            If IsNull(Me.MobilePhone.Value) Then  
                MsgBox ("Please enter at least one phone number in either Home Phone," _  
                    & "Work Phone, or Mobile Phone.")  
            End If  
        End If  
    End If  
End If
```

```
End If
```

```
End Sub
```

```
Private Sub State_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter State"  
End Sub
```

```
Private Sub ZipCode_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Zip Code"  
End Sub
```

```
Private Sub Country_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Country"  
End Sub
```

```
Private Sub HomePhone_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Home Phone Number including Area Code"  
End Sub
```

```
Private Sub WorkPhone_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Work Phone Number including Area Code"  
End Sub
```

```
Private Sub MobilePhone_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Mobile Phone Number including Area Code"  
  
End Sub
```

```
Private Sub EmailAddress_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Email Address"  
End Sub
```

```
Private Sub DateJoined_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Date of First Contribution towards Membership"  
End Sub
```

```
Private Sub DateRenewalRequestSent_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter Date that the most recent membership renewal request was sent"  
End Sub
```

```
Private Sub preferEmail_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Check this box if member would like to be contacted by email"  
End Sub
```

```
Private Sub preferPhone_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Check this box if member would like to be contacted by phone"  
End Sub
```

```
Private Sub preferLetter_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Check this box if member would like to be contacted by regular mail"  
End Sub
```

```
Private Sub Notes_GotFocus()  
Me.MouseOverTip.FontSize = 11  
Me.MouseOverTip.Caption = "Enter any additional notes"  
End Sub
```

```
Private Sub MemberType_GotFocus()  
Me.MouseOverTip.FontSize = 9
```

```
Me.MouseOverTip.Caption = "Type: Contributor($25/yr), Sponsor($50/yr), Business($100/yr), Benefactor($100/yr),  
Lifetime($1000) "
```

```
End Sub
```

```
'-----  
' cmdHome_Click  
'-----
```

```
Private Sub cmdHome_Click()  
On Error GoTo cmdHome_Click_Err  
  
DoCmd.Close acForm, "frmMembership_AddNewMember"  
DoCmd.OpenForm "frmFEShome", acNormal, "", "", , acNormal
```

```
cmdHome_Click_Exit:  
Exit Sub
```

```
cmdHome_Click_Err:  
MsgBox Error$  
Resume cmdHome_Click_Exit  
End Sub
```

```
'-----  
' cmdMembership_Click  
'-----
```

```
Private Sub cmdMembership_Click()  
On Error GoTo cmdMembership_Click_Err  
  
DoCmd.Close acForm, "frmMembership_AddNewMember"  
DoCmd.OpenForm "frmMembership_Main", acNormal, "", "", , acNormal
```

```
cmdMembership_Click_Exit:  
Exit Sub
```

```
cmdMembership_Click_Err:  
MsgBox Error$  
Resume cmdMembership_Click_Exit
```

```
End Sub
```

```
'-----  
' cmdContributions_Click  
'-----
```

```
Private Sub cmdContributions_Click()  
On Error GoTo cmdContributions_Click_Err  
  
DoCmd.Close acForm, "frmMembership_AddNewMember"  
DoCmd.OpenForm "frmContributions_Main", acNormal, "", "", , acNormal
```

```
cmdContributions_Click_Exit:  
Exit Sub
```



```
cmdContributions_Click_Err:
    MsgBox Error$
    Resume cmdContributions_Click_Exit
```

```
End Sub
```

```
'-----
' cmdDocents_Click
'
```

```
Private Sub cmdDocents_Click()
On Error GoTo cmdDocents_Click_Err

    DoCmd.Close acForm, "frmMembership_AddNewMember"
    DoCmd.OpenForm "frmDocent_Main", acNormal, "", "", , acNormal
```

```
cmdDocents_Click_Exit:
    Exit Sub
```

```
cmdDocents_Click_Err:
    MsgBox Error$
    Resume cmdDocents_Click_Exit
```

```
End Sub
```

```
'-----
' cmdFundraising_Click
'
```

```
Private Sub cmdFundraising_Click()
On Error GoTo cmdFundraising_Click_Err

    DoCmd.Close acForm, "frmMembership_AddNewMember"
    DoCmd.OpenForm "frmFundraising_Main", acNormal, "", "", , acNormal
```

```
cmdFundraising_Click_Exit:
    Exit Sub
```

```
cmdFundraising_Click_Err:
    MsgBox Error$
    Resume cmdFundraising_Click_Exit
```

```
End Sub
```

```
'-----
' cmdMailing_Click
'
```

```
Private Sub cmdMailing_Click()
On Error GoTo cmdMailing_Click_Err

    DoCmd.Close acForm, "frmMembership_AddNewMember"
    DoCmd.OpenForm "frmMailings_Main", acNormal, "", "", , acNormal
```

```
cmdMailing_Click_Exit:
```

```
Exit Sub
```

```
cmdMailing_Click_Err:
```

```
MsgBox Error$
```

```
Resume cmdMailing_Click_Exit
```

```
End Sub
```

```
'-----  
' cmdReports_Click  
'-----
```

```
Private Sub cmdReports_Click()
```

```
On Error GoTo cmdReports_Click_Err
```

```
DoCmd.Close acForm, "frmMembership_Main"
```

```
DoCmd.OpenForm "frmMembership_Reports", acNormal, "", "", , acNormal
```

```
cmdReports_Click_Exit:
```

```
Exit Sub
```

```
cmdReports_Click_Err:
```

```
MsgBox Error$
```

```
Resume cmdReports_Click_Exit
```

```
End Sub
```

```
'-----  
' cmdSubmitNewMember_Click  
'-----
```

```
Private Sub cmdSubmitNewMember_Click()
```

```
On Error GoTo cmdSubmitNewMember_Click_Err
```

```
'-----  
'check to make sure an Address, City, State, Zip were entered
```

```
If IsNull(Me.Address.Value) Then
```

```
MsgBox ("Please enter an Address in the Address field.")
```

```
Me.Address.SetFocus
```

```
ElseIf IsNull(Me.City.Value) Then
```

```
MsgBox ("Please enter a City in the City field.")
```

```
Me.City.SetFocus
```

```
ElseIf IsNull(Me.State.Value) Then
```

```
MsgBox ("Please enter a State in the State field.")
```

```
Me.State.SetFocus
```

```
ElseIf IsNull(Me.ZipCode.Value) Then
```

```
MsgBox ("Please enter a Zip Code in the Zip Code field.")
```

```
Me.ZipCode.SetFocus
```

End If

'-----

'-----

'check to make sure the user did not ERASE a phone number after entering one
'and then LEAVING the preferPhone contact preference checked

If Me.preferPhone.Value = True Then

 If IsNull(Me.HomePhone.Value) Then

 If IsNull(Me.WorkPhone.Value) Then

 If IsNull(Me.MobilePhone.Value) Then

 MsgBox ("Please enter at least one phone number in either Home Phone," _
 & "Work Phone, or Mobile Phone. Or please uncheck the Phone preference under" _
 & "Contact Preference.")

 Me.preferPhone.SetFocus

 End If

 End If

 End If

End If

'-----

'-----

'check to make sure the user did not ERASE an email address after entering one
'and then LEAVING the preferEmail contact preference checked

If Me.preferEmail.Value = True Then

 If IsNull(Me.EmailAddress.Value) Then

 MsgBox ("Please enter a valid email address OR uncheck the Email preference under" _
 & "Contact Preference.")

 Me.preferPhone.SetFocus

 End If

End If

'-----

'-----

'confirm if this member does NOT wish to be contacted at all
'e.g. NOTHING is checked in the Contact Preference

If Me.preferEmail.Value = False Then

 If Me.preferPhone.Value = False Then

 If Me.preferLetter.Value = False Then

 MsgBox ("Please confirm that this member prefers NOT to be contacted." _
 & "This also means that the member will NOT receive renewal letters.")

 Me.preferLetter.SetFocus

 End If

 End If

End If

'-----

```
cmdSubmitNewMember_Click_Exit:
    Exit Sub

cmdSubmitNewMember_Click_Err:
    MsgBox Error$
    Resume cmdSubmitNewMember_Click_Exit

End Sub

'-----
' cmdEditMember_Click
'-----

Private Sub cmdEditMember_Click()
    On Error GoTo cmdEditMember_Click_Err

    DoCmd.Close acForm, "frmMembership_AddNewMember"
    DoCmd.OpenForm "frmMembership_EditMember", acNormal, "", "", , acNormal

cmdEditMember_Click_Exit:
    Exit Sub

cmdEditMember_Click_Err:
    MsgBox Error$
    Resume cmdEditMember_Click_Exit

End Sub
```

Appendix II.1

Screenshots: Home Section



Appendix II.2

Screenshots: Membership Section

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Member Reports Add New Member Edit Member

INSTRUCTIONS:

Click "Member Reports" to see list of printable reports.

Click "Add New Member" to enter details of a new contributor.

Click "Edit Member" to update details of a member.

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Member Reports Add New Member Edit Member

Member Reports

- ☐ All Data - No Payment Info
- ☐ All Data - Last Renewal Date
- ☐ Current Members (within 18 months)
- ☐ Current Members - Yearly Renewal Notice
- ☐ Member Type:
- ☐ Renewals 12 months out
- ☐ New Members by Month
- ☐ Renewals By Month
- ☐ Dead Wood

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Member Reports Add New Member Edit Member

HINT: This box provides brief instructions/details for each data field.

First Name	<input type="text"/>	Home Phone	<input type="text"/>
Last Name	<input type="text"/>	Work Phone	<input type="text"/>
Organization	<input type="text"/>	Mobile Phone	<input type="text"/>
Address	<input type="text"/>	Email Address	<input type="text"/>
City	<input type="text"/>	Date Joined	<input type="text"/> Renewal Sent <input type="text"/>
State	<input type="text"/>	Contact Preference: Email <input type="checkbox"/> Phone <input type="checkbox"/> Letter <input checked="" type="checkbox"/>	
Zip Code	<input type="text"/>	Notes	<input type="text"/>
Country	<input type="text"/>	Member Type: <input type="text"/> <input type="checkbox"/> Docent	

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Member Reports Add New Member Edit Member

HINT: This box provides brief instructions/details for each data field.

Select Name:

First Name	<input type="text"/>	Home Phone	<input type="text"/>
Last Name	<input type="text"/>	Work Phone	<input type="text"/>
Organization	<input type="text"/>	Mobile Phone	<input type="text"/>
Address	<input type="text"/>	Email Address	<input type="text"/>
City	<input type="text"/>	Date Joined	<input type="text"/> Renewal Sent <input type="text"/>
State	<input type="text"/>	Contact Preference: Email <input type="checkbox"/> Phone <input type="checkbox"/> Letter <input type="checkbox"/>	
Zip Code	<input type="text"/>	Notes	<input type="text"/>
Country	<input type="text"/>	Member Type: <input type="text"/> <input type="checkbox"/> Docent	

Appendix II.3

Screenshots: Docents Section

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

INSTRUCTIONS:

Click "Docent Reports" to see list of printable reports.

Click "Add New Docent" to enter details of a new docent.

Click "Edit Docent" to update details of a docent.

Click "Log Hours" to update hours for a docent.

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

- Active Docents
- Docent Information - All Docents
- Docent Cumulative Hours
- Docent Status **GO!**
- Hours By Docent By Month

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

HINT: This box provides brief instructions/details for each data field.

First Name Home Phone

Last Name Work Phone

Address Mobile Phone

City Email Address

State Class Year

Zip Code Contact Preference: Email ☐ Phone ☐ Letter ☒

Country Notes

Docent Status: ☐ Member

Click to Submit New Docent

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

HINT: This box provides brief instructions/details for each data field.

Select Name:

First Name Home Phone

Last Name Work Phone

Address Mobile Phone

City Email Address

State Class Year

Zip Code Contact Preference: Email ☐ Phone ☐ Letter ☒

Country Notes

Docent Status: ☐ Member

Click to Update Docent Info

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

Select Docent Name: **Edit Previously Entered Hours**

Instructions:

Use the drop-down box above to find the docent by last name. You can type the first few letters of the last name to quickly jump to that part of the list. Click the name for whom you wish to input hours. Fill in the fields to the right and click the Submit button below to add the record to the database. All hours are viewable in the Docent Reports section.

Data Entry for:

Date Work Performed:

Number of Hours:

Click to Submit Docent Hours

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Docent Reports Add Docent Edit Docent Log Hours

Select Docent Name: **This page is for EDITING Docent Hours**

Docent ID vDate Num of Hours ID

Edit Hours for:

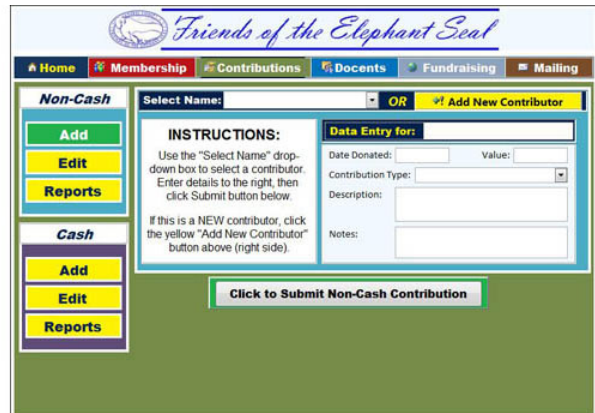
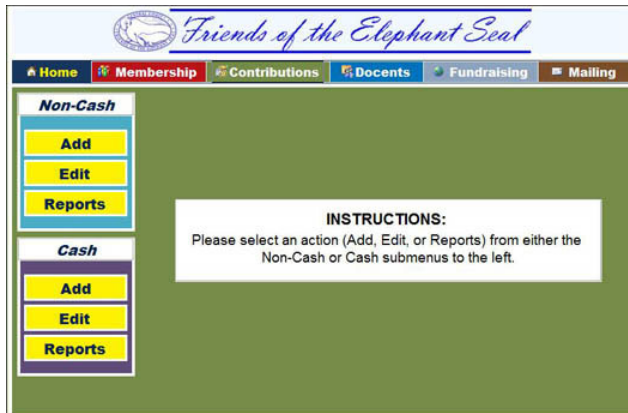
Date Work Performed:

Number of Hours:

Click to Update Docent Hours

Appendix II.4

Screenshots: Contributions Section



Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Non-Cash

Select Name:

SEARCH RESULTS:

Data Entry for:

Date Donated: Value:

Contribution Type:

Description:

Notes:

Click to Update Non-Cash Contribution **X Delete**

INSTRUCTIONS:
Select the Contributor using the drop-down box. Select the contribution from the Search Results box. Edit details then click Update button above.

Cash

Add
Edit
Reports

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Non-Cash

Non-Cash Reports

☐ All Data - Name, Date, Item, Value

☐ Current Non-Cash Data: 12 month period

☐ Sort All Data by Contribution Type

☐ View by Type: **GO!**

☐ LABELS: Non-Cash Thank You

Add
Edit
Reports

Cash

Add
Edit
Reports

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Non-Cash

Select Name: **OR** **Add New Contributor**

INSTRUCTIONS:
Use the "Select Name" drop-down box to select a contributor. Enter details to the right, then click Submit button below.
If this is a NEW contributor, click the yellow "Add New Contributor" button above (right side).

Data Entry for:

Date Donated: Amount:

Contribution Type:

Description:

Notes:

Click to Submit Cash Contribution

Cash

Add
Edit
Reports

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Non-Cash

Select Name:

SEARCH RESULTS:

Data Entry for:

Date Donated: Value:

Contribution Type:

Description:

Notes:

Click to Update Cash Contribution **X Delete**

INSTRUCTIONS:
Select the Contributor using the drop-down box. Select the contribution from the Search Results box. Edit details then click Update button above.

Cash

Add
Edit
Reports

Friends of the Elephant Seal

Home Membership Contributions **Docents** Fundraising Mailing

Non-Cash

Cash Reports

☐ All Data - Name, Date, Address, Amount, Type

☐ Sort All Data by Contribution Type

☐ View by Type: **GO!**

☐ LABELS: Cash Thank You

Add
Edit
Reports

Cash

Add
Edit
Reports

Appendix II.5

Screenshots: Fundraising Section

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

INSTRUCTIONS:

EVENTS
To ADD or EDIT an Event: Click "Details" in the Event submenu
To ADD or EDIT an Expense: Click "Expenses" in the Event submenu
To view Event Reports: Click "Reports" in the Event submenu

PARTICIPANTS
To ADD or EDIT an Attendee: Click "Attendees" in the Participant submenu
To ADD or EDIT a Donor/Contribution: Click "Donors" in the Participant submenu
To view Participant Reports: Click "Reports" in the Participant submenu

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

Add New Event **Edit Existing Event**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

Add New Event **Edit Existing Event**

Event Name:
Event Date: Event Time:
Location:
Notes:

Click to Submit New Event

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

Add New Event **Edit Existing Event**

Select Event:

Event Name:
Event Date: Event Time:
Location:
Notes:

Click to Update Event Info **Delete**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

Add New Expense **Edit Existing Expense**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors
- Reports

Add New Expense **Edit Existing Expense**

Select Event:

Select Name of Provider:
- OR -
Enter Name of New Provider:
Service Provided:
Cost:
Notes:

Click to Submit New Expense

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Expense **Edit Existing Expense**

Select Event: [Dropdown]

The expenses for the selected event are listed below.
Click the expense below to edit then click "Next"

Next

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Expense **Edit Existing Expense**

Event Name: [Text]

Change Name of Provider: [Dropdown]

- OR -

Enter New Name for Provider: [Text]

Service Provided: [Text]

Cost: [Text]

Notes: [Text]

Click to Update Expense Info **Delete**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Event Reports

View All Expenses for Event: [Dropdown] **GO!**

Net Income for Event: [Text] **GO!**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Attendee **Edit Attendee**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Attendee **Edit Attendee**

Select Name: [Dropdown] (If not in list, Enter Info Below)

Select Event: [Dropdown]

First Name [Text] Home Phone [Text]

Last Name [Text] Work Phone [Text]

Organization [Text] Mobile Phone [Text]

Address [Text] Email Address [Text]

City [Text] Notes [Text]

State [Text] Purchased Auction Item at this event ☐

Zip Code [Text] Item Purchased: [Dropdown]

Country [Text] **Add Additional Purchase**

Click to Submit New Attendee Info

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Additional Items Purchased at:

Item Purchased: [Dropdown]

Item Purchased: [Dropdown]

Item Purchased: [Dropdown]

Item Purchased: [Dropdown]

Item Purchased: [Dropdown]

Item Purchased: [Dropdown]

Save

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Attendee **Edit Attendee**

Select Name: AND

Select Event:

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Notes

State Purchased Auction Item at this event ☐

Zip Code Item Purchased:

Country Add Additional Purchase

Click to Edit Attendee Info

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Donor **Edit Existing Donor**

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Donor **Edit Existing Donor**

Select Name: (If not in list, Enter Info Below)

Select Event:

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Notes

State Select Donor Type:

Zip Code Product/Service Provided:

Country Claimed Value: Amt. Received:

If not sold, enter highest bid:

Add Additional Product/Service

Click to Submit New Donor Info

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Additional Items Purchased at:

Item Purchased:

Item Purchased:

Item Purchased:

Item Purchased:

Item Purchased:

Item Purchased:

Save

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Donor **Edit Existing Donor**

Select Name: (If not in list, Enter Info Below)

Select Event:

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Notes

State Select Donor Type:

Zip Code Product/Service Provided:

Country Claimed Value: Amt. Received:

If not sold, enter highest bid:

Add Additional Product/Service

Click to Update Donor Info

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Participant Reports and Labels

Contact Info by Participant Type: **GO!**

Last Donation Date and Product/Service Donated by Donor Type: **GO!**

Last Event Attended (Attendee):

Labels: All Merchants ☐ Labels: All Artists ☐ Labels: All Attendees ☐

Labels: All Wineries ☐ Labels: All Vendors ☐

Appendix II.6

Screenshots: Mailing Section



Section III. User Manual & Help System

Introduction: User Manual & Help System

The scope of this senior project is to design and implement a comprehensive, user-friendly database for the Friends of the Elephant Seal, a non-profit organization based in San Simeon, California. The goal of the Friends is to educate people about elephant seals and to teach stewardship for the ocean and its inhabitants. Currently, the Friends use very archaic methods of tracking membership, volunteer hours, and donations. Most of their data entry and manipulation is done manually and often on paper. This results in many inconsistencies in their existing data and formatting. Most importantly, their current method of data capture severely limits their ability to 1) track and analyze their data and 2) produce meaningful business reports and business communication.

Our goal is to design and implement a Microsoft Access database that is customized to their specific needs. We will ensure that our design is ergonomic and intuitive for all users. This database will have an ergonomically designed front end that will be navigated through a network of switchboards and/or tabbed pages. Since the specific user demographic will be women above the age of 60 years old, it is critical that our interface design be as intuitive, ergonomic and as easy-to-use as possible. The user interface will be the primary means of navigating the database so we will include on-screen help and detailed instructions where appropriate. In terms of business use, one of the most important aspects of the database will be its reporting capabilities. For all default reports, we will minimize, as much as possible, the effort required to generate

professional reports. We will accomplish this by building in integration capabilities with Excel, Word, and Outlook. Since our specific user demographic may not be the most computer savvy, our inclusion of an ergonomic and intuitive interface along with detailed instructions for report generation is crucial. Detailed instructions will be provided both on-screen (as needed) as well as included in a printed user manual with clear step-by-step instructions with screenshots. The standard reports and queries that we design must be clear and accurate since they will be directly used in applications for large financial grants or to contact specific members and/or specific donors. We will create two versions of the database: the first database will be locked so that the user will only have access to predefined reports and queries that we create; the second database will be unlocked and available to be edited or updated in the future. After meeting with Judy Burley, the Friends of the Elephant Seal secretary, we have compiled an initial list of functionalities that would be most beneficial to the users of the database. However, this list is not yet comprehensive and finalized. We hope to have a finalized list after our meeting on November 6.

With regard to design and functionality, our goal is to create a product that will contribute to usability and productivity for business use. We will include the ability to track docent volunteer hours by date, time period, and/or individual. Since annual volunteer hours are a key measurement required in the application for grants, our inclusion of such tracking abilities will greatly increase their business productivity. Their current procedure requires that each docent write their hours on a sheet of paper

and submit that tracking sheet to the office. At periodic intervals, an administrator will gather the tracking sheets for all docents and transfer the information to a generic table in a standalone Excel file. Our solution will be to design a simple and efficient interface that either the docent or an administrator will use to enter the hours at the time they are submitted (or whenever is convenient). These records will be captured in the database as opposed to being maintained in a standalone file. Capturing this data in the database allows for further analysis and easier reporting if needed. Our database will also allow the user to enter, track, and report all donations. We will track donations from members, non-members, businesses and individuals/families. The donations fall into two categories: cash donations and in-kind donations (non-cash such as a product, service, or volunteer time). We will track member status (active or inactive) and include the ability to notify members to renew. The notification process will likely involve integration with Microsoft Outlook for mass email and integration with Microsoft Word for direct letter creation via mail merge. For all members and docents, our database will record their personal information (address, phone number, etc.), their contributions (financial, volunteer, or both) and other information as required or requested.

This senior project will be approached in three distinct phases with each phase presenting its own unique challenges. The initial phase will involve collecting and sorting all relevant data and determining the business functionality that the Friends require in the database. The next phase will involve designing the structure of the database to meet those business requirements. The last phase will involve testing and

debugging, first by ourselves and then by the Friends staff prior to delivering the finished product. The initial phase will involve conducting interviews and seeing what functionality they have with their current data collection techniques. Based on their business requirements for the database, we will create a set of proposed milestones with a general timeline in Microsoft Project (Gantt chart). The timeline of the initial phase will be difficult to estimate. Prior to designing the schema of our database, we will need to spend time deciphering and cleaning up all of the raw membership data, docent data, and contributions data. Much of their data is inconsistently formatted and unconstrained. For a simple example, some membership records do not list a First Name and Last Name; instead the record shows “The Williams Family” with “The” being the First Name and “Williams Family” as Last Name (actual name changed for privacy). We will work with the Friends to clean up their data and most importantly, agree upon the constraints for all of the different data types. This is especially important in our implementation of mail merging and reporting because the information merged with a standard letter or report must be consistently categorized and formatted within the database tables. Once the data is prepared and we have an explicit list of desired reporting and tracking functionality from the Friends staff, we will enter the next phase of the project involving analysis of all entities and relationships in order to design the most structurally sound database (at least third normal form where appropriate). Once the database structure is designed, we will begin populating tables with data, designing the queries and reports, and building in Microsoft integration capabilities with Outlook,

Excel and Word. We will track problems encountered and update the timeline as needed. Our documentation will also include detailed thought processes and justifications for our chosen design. For example, in query design, we will illustrate the logic of the query using relational algebra notation learned in IME 312. During the final phase of testing and debugging the prototype, we will document any issues we (and they) encounter with our prototype version and will track revisions and improvements in development of the final product. This phase will involve many hours of inputting false or null data into our table to make sure that it is properly constrained and “foolproof”. Since we will not be present for the day-to-day use of our database, it is imperative that it is tested to handle any potential user error or unforeseen data entry. When we are confident that our database is complete and ready for daily use, we will complete a comprehensive user manual including a walk-through of all functions including screen shots. We will provide a prototype version to the Friends staff for their approval and recommendations for any minor changes. We anticipate that all the above tasks as well as scope creep and unforeseen roadblocks will require between 450 and 600 hours of work.

Background: User Manual & Help System

In 1990, the elephant seal population near Piedras Blancas lighthouse was less than two dozen. One year later, almost 400 elephant seals were counted on those same beaches. In 1992, the first elephant seal birth was recorded in that area. The colony

continued to grow and by 1996 almost one thousand births were recorded. This growing elephant seal population presented an immediate safety hazard to both the elephant seals and visitors alike.

Friends of the Elephant Seal were formed in 1997. The organization is run by volunteers and their goal is to educate people about the seals and their environment. Respect for the seals and public safety are their primary concerns. There are volunteers (docents) at the viewpoint to answer questions and help visitors get the most from their viewing experience.

Caltrans has recently made improvements to the viewing point that has enhanced the viewing of the elephant seals. They added new walkways, interpretive signs in many languages, and handicapped parking with access. This increased visibility has resulted in increased memberships for the Friends. As a result, the Friends are in even greater need for improved data collection, tracking and reporting capabilities for members, donors, and contributions.

To gain insight into their daily business operations, we met with Judy Burley to discuss their current capabilities as well as any new functionality they would require in our database design. We will be meeting with Diana, the primary user of our database, on November 6 to create a detailed list of requirements and capabilities. We have gained a considerable amount of ideas and information from their website (www.elephantseal.org) that we hope to include in our implementation.

We have researched non-profit organizations similar to Friends of the Elephant Seal in order to create a database design that would accomplish many unforeseen needs of a non-profit. We have spoken with the non-profit organization, the Friends of the Inyo, regarding the organization of their hours and donations. The Friends of the Inyo use the non-profit management software GiftWorks. We have downloaded the free trial version of GiftWorks and are currently exploring its interface and functionalities to compile a list of ideas for our interface as well as database capabilities.

Literature Review: User Manual & Help System

1) Dix, A., Finlay, J., Abowd, G., & Beale, R. (1993). *Human-Computer Interaction*. Prentice Hall.

Human-computer interactions (HCI) describes and analyzes the human, the computer, and the interactions between the two. This term has only been in widespread use for a little over two decades, but its roots in more established disciplines.

Ergonomics is one of the many disciplines that analyzes HCI. Traditionally, Ergonomics research had been primarily concerned in the physical characteristics of machines and systems, and how these affect user performance. As technology improved, computer use became more widespread and the need for Ergonomic research became more prevalent in software.

Furthermore, this book goes into great detail about various design practices: The Design Process, Task Analysis, Dialogue Notation, Models of the System, Implementation Support, Evaluation Techniques, and Help and Documentation. We will be able to use the concept of HCI and design practices to create a user friendly and intuitive database for Friends of The Elephant Seal.

2) Eberts, R. (1994). *User Interface Design*. Prentice Hall.

User Interface Design's purpose is to present the conceptual approaches, experimental methodology, theories and models needed to design good interfaces. The majority of the book covers experimental methodologies, Four Approaches to Human-Computer Interaction: Empirical Approach, Cognitive Approach, Predictive Modeling Approach, and Anthropomorphic Approach.

Under the empirical approach, the interface designer would be required to design, implement, and analyze the results from empirical studies. For the cognitive approach, theories in cognitive science and cognitive psychology are applied to the human-computer interface to make the processing of information by both the human and the computer easier and more efficient. The purpose of the predictive modeling approach is to try to predict performance of humans interacting with computers. Lastly, under the anthropomorphic approach, the designer uses the process of human-human communication as a model for human-computer interaction. Using one or all of these

approaches to our project will help us in designing our database and creating an easy to use interface.

3) Shneiderman, B. (1987). *Designing the User Interface*. Addison-Wesley Publishing Company, Inc.

Designing the User Interface was written primarily for designers, managers, and evaluators of interactive systems. The main focus of this book is about designing the user interface and help systems, but it briefly covers two other major areas: the discussion of human cognitive skills, personality styles, and perceptual abilities, and the description of the dialog management systems (User Interface Management Systems) and formal specifications. The book is divided into three parts: Interaction Styles, Considerations and Augmentations, and Assessment and Reflection.

In the Considerations and Augmentations section, there is a chapter on about Printed Manuals, Online Help, and Tutorials. In this chapter Shneiderman discusses the use of paper and on screen tutorials. Some studies showed that people took almost twice as long to read the on screen tutorials than its paper counterpart. Also user manual guidelines for both the product and the process are given and discussed, giving us something to follow when creating ours. For Friends of the Elephant Seal we are going to create a help system and training tutorials so employees will have a full understanding of the database and how it works.

4) Adiele, Ndunuju "Importance Of Training And Development In A Firm." Importance Of Training And Development In A Firm. 15 Jan. 2009 *EzineArticles.com*. 11 Dec. 2009 <<http://ezinearticles.com/?Importance-Of-Training-And-Development-In-A-Firm&id=1885451>>.

In this article Adiele talks about the importance of training and development, stating that it is the framework for helping employees to develop their personal, organizational skills, knowledge, and abilities. We feel that the training we design for FES will help the employees in all these areas, creating more efficient employees.

There are two main types of training in organizations: Internal and External. Internal training is organized in house using a senior staff or talented staff as the resource. External training is organized outside of the organization mostly using consultants or training institutes. For FES they will be doing more internal training. All employees should strive to be the best employee they can by learning as much as they can about their work and the organization itself. Training is a step in the right direction and should be encouraged by the employer.

Some topics in training and development for organizations are: communications, computer skills, customer service, diversity, ethics, human relations, quality management, and safety. Our training for FES will consist mainly of computer skills and communication. The benefits of employee training and development are: increased

job satisfaction and morale among employees, better interpersonal relationship and customer satisfaction, increased employee motivation, increased efficiencies in processes, increased capacity to adopt new technologies and methods, increased innovation in strategies and products, reduced employee turnover, enhanced company image, better risk management and safety consciousness, and increased productivity.

5) Kearsley, G. (1988). *Online Help Systems: Design and implementation*. Ablex Publishing Corporation.

Online Help Systems is about the design and implementations of help systems. They are needed because we have expectations that our program is so intuitive that no help is needed, but that is not the case. People have many different skill sets with computers and what we think is intuitive others might not, so a help system is imperative. A program that doesn't have a help system is incomplete or inadequate. The addition of our help system will provide needed and necessary information about our program. So in theory there would be no need for external instruction to use our program.

Help systems contribute to the overall usability of the program by reducing the time it takes to complete various functions throughout the program. The help also acts like a "safety net" that catches people when they do something not anticipated in the design of our program. It is vital to the overall usability of the program.

The book then goes into detail about different types of help system

implementations and how they are important. For our program we are looking at using a pop up window that can be opened in any section of our program. The help will open with the topic of the current section that the user is in. Our goal is to make the help system completely accurate and useful.

6) Doheny-Farina, Stephen. (1988). *Effective Documentation: What We Have Learned from Research*. Massachusetts Institute of Technology.

Effective Documentation is about the different methods used for documentation, the history and evolution of it, and some research finding about documentation. For our program we want to create effective documentation that is useful and easy to understand. Once we are done with our project, someone should be able to view the documentation and understand exactly how our program works without help from the designers.

A major issue that documentation faces is the amount of information that should be provided for the user. Should we explain everything or just some things? Should we provide a lengthy amount of information or should we be concise? Charney, Reder, and Wells did some research about "the expounders vs. the minimalists." Their finding indicated that elaborations can enhance learning and performance in certain circumstances. Hunts and Vassiliadis researched the use of elaborate language in documentation and found that users perform tasks more efficiently when using minimalist instructions. This indicates that the documentation should be designed for

the user. Do you want them to be more efficient at their tasks or should it be more informative?

7) Selic, Bran (2009). Agile Documentation, Anyone? IEEE Software, 26(6), 11-12.

Retrieved November 21, 2009, from ABI/INFORM Global. (Document ID: 1875813151).

Selic states that “the purpose of documentation is to instruct those who are unfamiliar with a system (or who may have forgotten it) about how the system is structured, how it works, and the design rationale that led to it.” Our user manual for the FES database will be written for two audiences: the current database user as well as for any future developer that may want to add additional features and functionality to our version. Selic states that without good documentation, the user or developer is left with no options other than “discovery by exploring the system.” He further advocates the need for proper design documentation by noting that “modern software is increasing in complexity, software systems are typically revisited and revised more often than other types of systems, and code maintenance is usually delegated to less experienced junior staff who are unfamiliar with the code.” Selic argues that annotating the code with comments is insufficient and that “the intellectual effort required to understand anything but the simplest code through direct inspection can be substantial — even in cases of well-documented code (which, sadly, is the exception rather than the rule). Selic argues that good documentation should include a focus on architectural specifications, which he defines as “technology-independent descriptions of the higher-

level structure and behavior of systems along with key design principles.”

Documentation should include justifications for design choices as well as descriptions why other design choices were rejected. It will be beneficial to the database user or future developer if we include these suggestions in our user manual because the framework and core design ideas for the database will be easily accessible, saving the user or developer hours of frustration in exploring by trial and error.

8) David Wright. *Implicature, Pragmatics, and Documentation: A Comparative Study*. *Journal of Technical Writing and Communication*, Volume 38, Number 1 (2008), pp. 27-51, November 21, 2009 from

<http://ejournals.ebsco.com/direct.asp?ArticleID=4E1C951CFF4BD9B60916>

Wright defines implicature as “that part of the meaning of a sentence or text that is left to be filled in by the reader. In other words, that part of the meaning of our words that is left to the reader on the basis of our contextual situation and mutual understanding of the goals of our conversation.” Wright defines pragmatics as “the study of language used in context. In other words, what is the situation in which the reader will be using this text, both as a reader and a (in this case) computer user?”

Regarding software documentation, Wright defines usability “in terms of the question: how easily can the intended user understand the manual, assemble the input from that manual into a working framework of operation, and take the appropriate actions within the software to achieve specific goals?” Wright acknowledges that as software has

grown more complex, the quality level of its software documentation has not kept pace.

Wright states that:

One key reason for the lack of documentation development is a lack of consistent strategies for determining the appropriate level of detail for users. Software developers want to provide adequate documentation for users, but seem unable to define the pre-existing knowledge of users and, hence, the appropriate level of detail and language to use within documentation. These problems are exacerbated by varying levels of knowledge among users. This must lead us to ask the questions: What do we assume the user knows? And how should we define the user's situation?

Wright's point is very applicable to our particular project. For our FES database project, the current database user has some experience in MS Access. However, since the organization is staffed entirely by volunteers, we can assume that there is no long term stability in that position. If the current database user leaves, there is no guarantee that the next person to fill the position will have an adequate background in MS Access. For this reason, we must assume that the user manual will be written for a novice MS Access user. It is important to note that a novice user will not have the same vocabulary and contextual understanding of the software as an expert user will have. Many user manuals that accompany software packages today seem to be written by software experts or developers. The writers tend to use language that is very commonplace in the technical arena of software development, but are not part of most users' vocabulary. This explains the popularity of the "For Dummies" user manuals that sell so well.

Wright notes in his article that “when users are asked why they prefer the “for Dummies” series they generally say something like, “it’s just easier to read.” What they mean is that the implicatures, terminology, and contextual situations used in these books are easier to cognitively process than those found in traditional manuals.”

Wright’s article explores why this is true.

The fundamental approach behind task-oriented documentation is to target users, design specific instructional tasks directly related to user needs, and to organizing written instructions in a way that makes sense to the user. The same principles can be applied to language within software documentation through the principles of implicature and pragmatics.

9) Wickens, Christopher D. *Introduction to human factors engineering*. Upper Saddle River, N.J: Pearson Prentice Hall, 2004. Print.

Introduction to Human Factors Engineering was the textbook for IME 319, Human Factors Engineering. The discussion regarding perception in Chapter 6: Controls will be especially useful in the design of our user interface. For example, in our focus to maximize top-down processing we will “maximize discriminating features” to avoid confusion; “use smaller vocabulary” in our menus, navigation, error messages, etc.; exploit redundancy if possible using visual and auditory alerts, etc.). Chapter 8: Displays also contains some very useful principles that will guide our user interface

design. For example, the principle of consistency indicates that we should design displays that are consistent with respect to color and position of common features.

10) Ellison, Matthew. "WritersUA - Review of Screen Capture Tools." *WritersUA - Training and Information for User Assistance Professionals*. Feb. 2009. Web. 11 Dec. 2009. <<http://www.writersua.com/articles/capturetools/index.html>>.

In creating the user manual, we will rely heavily on screen shots of the user interface to illustrate specific points. Screen shots will reduce the amount of words needed to describe the situation, reducing the possibility of confusing the end user. On a Windows operating system, built in functionality such as the Print Screen function or included applications like the Snipping Tool allow for easy creation of the occasional screen capture. However, producing a comprehensive user manual will involve a very large number of screen shots. In order to speed up this part of the workflow, selecting an appropriate application specifically designed for processing large numbers of screen captures will be essential to the timely completion of the project. In this article, Ellison reviews seven screen capture applications, namely FullShot 9.5, HyperSnap 6.4, MadCap Capture 3, RoboScreen Capture 2, ScreenHunter 5 Free, SnagIt 9.1 and TNT 2.1. Ellison also includes a table comparing all key features of the reviewed products. Due to our budget constraints, it is likely that we will only be able to use the free products with fewer features or the trial versions of these products. After developing the database prototype we will conduct some initial testing of the screen capture

workflow. At that point, we will evaluate our needs and decide whether the free or trial products provide significant gains in productivity, or if built-in functionality such as Print Screen or the Snipping Tool will suffice. If neither of these options is deemed sufficient, we may purchase a software license for one of Ellison's reviewed products.

11) Corbin, Michelle, and Yoel Strimling. "WritersUA - Editing Modular Documentation: Some Best Practices." *WritersUA - Training and Information for User Assistance Professionals*. Web. 11 Dec. 2009.
<<http://www.writersua.com/articles/modular/index.html>>.

In creating the user manual for the FES database, it is important that the information that we write is organized in a clear and logical manner. This will enable the end user to quickly search and locate the information needed. When a user searches the index of a user manual, they will look for a specific topic and go directly to that section. The user manual must be written in such a way as to provide standalone instruction sets for specific topics. Included within these instruction sets will be references to other sections of the document for further instruction or clarification. Since the user manual will more likely be used as a reference or resource that is accessed only for clarification, we can assume that it will be read in a non-linear fashion. For this reason, writing the user manual in modular sections is the most efficient way to present the information. The article by Corbin and Strimling outlines the general approach to developing content for modular documentation and provides a list of best practices.

They write that “Modularization is based on these main concepts: Chunk text into logical standalone topics, label topics with clear and meaningful titles [and] link related topics to each other.” Their list of suggested best practices includes: topic types must not be mixed, topics must be standalone, introductory information must be clear and to-the-point, topics cannot be too long, paragraphs must be short, titles must be unique and descriptive, related topic links must be meaningful and topic collections must be useful and reader-focused.

12) Dobrin, Sidney I. *Technical communication in the twenty-first century*. Upper Saddle River, N.J: Pearson Prentice Hall, 2008. Print.

This book was the text used in English 149: Technical Writing for Engineers. The relevant chapters in this book include: Chapter 2 – Rhetoric and Technical Communication; Chapter 7 - Visual Rhetoric and Using Visuals; Chapter 8 - Layout and Design, Chapter 9 - Revising, Rewriting, and Editing; Chapter 10 – Usability; Chapter 16 – Websites and Online Environments; Chapter 17 – Technical Instructions; and Chapter 18 – Manuals. Chapter 2 offers an overview of the approach to drafting, revising and producing a finished technical document. The approach includes defining the problem or reason for writing, identifying the needs of the audience (end user), determining the types of information necessary, organizing the information logically and drafting the document, creating and integrating visual elements where appropriate, checking the accuracy of the document, testing the usability of the document and revising as

necessary. Chapter 7 includes discussion of several different types of visual aids that may be included in our manual, such as icons, flowcharts, screen shots, and tables. This chapter also discusses the appropriate use of color as a tool for highlighting key elements on the page. For example, warm colors such as red, orange and yellow should be used to draw a reader's attention rather than cool colors like blue and green. Chapter 8 discusses general principles of document architecture such as balance, connection, duplication, variation and flow. This chapter also discusses the physical aspects of the printed document such as paper type and quality, binding type (e.g. plastic grip, loose-leaf, comb or spiral, saddle binding and perfect binding). This chapter also discusses typographical elements such as font style, font size, and guidelines for formatting titles, headers and footers, captions and other document elements. Chapter 9 provides useful tips on the editing process and making sure the document is concise and effective. Some general guidelines for revising include ensuring readability through proper word choice, clarity in language, presentation of information and design/layout. Some of the more specific tips for revising for clarity include simplifying or breaking down sentences that contain too much information; clarifying ambiguity; changing punctuation that causes confusion; compressing sentences carefully (i.e. do not eliminate key words that will cause confusion); order words carefully; use active voice where appropriate. Chapter 10 discusses some practical approaches to ensuring document usability including a detailed discussion of how to conduct a usability test. Although Chapter 16 primarily discusses websites and online environments, many of

the principles can be applied to our project. Websites allow the reader or user a great deal of flexibility in the order in which pages are browsed, i.e. the flow of information is not necessarily linear. Similarly, when launching a custom-designed database in Microsoft Access, the user interface will provide the user with several navigation options from the default screen. For this reason, the database can be viewed as a non-linear application and as such, it is important that the navigation experience is logical and efficient. Chapter 16 lists several principles that will prove useful in our user interface design, such as: Be sure that users always know where they are within the (application) and what options they have; design consistent navigation elements, clearly identify all navigation links; ensure the user can quickly return to the default screen; verify that all navigational elements take the user to the intended destination; be sure that visuals do not overwhelm; clearly label all visuals; icons should be easily interpreted; ensure file size of graphical elements do not slow performance; use clear and contrasting colors, particularly in text. Chapter 17 provides a practical approach to writing detailed step-by-step tutorials. For example, some suggestions include: numbering each step, performing all steps as you write them to ensure accuracy; begin each step with a verb which clarifies what the user must do; avoiding highly condensed language to prevent confusion; using positive commands rather than negative to avoid confusion; include only one action per step to be clear and concise; group similar steps together to allow better flow of action; visually separate steps using white space; and clarify steps with visual aids if necessary. Chapter 18 provides a general overview of

how to approach writing various types of manuals. In our case, we will be designing a user manual for a novice user of Microsoft Access. For this reason, it will be important to include a Scope section that that explicitly states what is included and what is omitted. This will let the user know what problems may or may not be solved using the manual. This chapter also recommends inclusion of a definitions section and an alerts or special considerations section to inform the user of any specific issues they should be aware of before using the product. The conclusion and end matter sections should include troubleshooting, additional alerts, and any maintenance issues. Depending on the length and complexity of the finished user manual, we may include an index in the end matter if usability tests find that the table of contents is not sufficiently descriptive and detailed.

Methodology: User Manual & Help System

Our approach to designing an ergonomic user interface will rely heavily on the knowledge and principles we learned in IME 319 – Human Factors Engineering as well as IME 437 – Advance Human Factors Engineering. As mentioned in the Literature Review section, the textbook from IME 319 will provide some general principles for user interface design, specifically the chapter on Controls and the chapter on Displays. We will also be using some of the interface principles outlined in the textbook for English 149 – Technical Writing for Engineers. As discussed in the Literature Review

section, there is a chapter that discusses websites and online environments that is very applicable to the ergonomics and usability of our user interface.

Our approach to writing the user manual and help files will rely heavily on the information gained in English 149 – Technical Writing for Engineers. As outlined in the Literature Review section, several chapters of the textbook used in English 149 will be referenced for best practices and guidelines in the design and authoring of the comprehensive user manual. At this stage of the project, the exact method for including an online Help system has yet to be determined. Initial research has shown potential issues using the Microsoft Help system. As stated on the Microsoft support website: “In Microsoft Access, when you display a custom Compressed HTML (.chm) Help file, the Help content is displayed in the Access Help window, along with the default Access index, the Access Answer Wizard, and the Access title. This behavior occurs even if you specify your own title and index within the Help file.”

(<http://support.microsoft.com/kb/275117>) Since our database will contain custom functions, we will necessarily include a custom index for our help file so the aforementioned MS Access Help behavior may be an issue. Another alternative would be to purchase the Help Generator software (<http://www.helpgenerator.com/>) that automatically creates HTML help files, screen shots and context-sensitive help links for all functions and forms within the MS Access project file. Given the time constraints of this project and depending on the complexity of our finished product, this may be our only feasible option considering the amount of additional coding it would require to

produce a custom standalone Help system in compressed HTML. However, the \$300 cost may prove to be an issue if adequate funding is unavailable.

Regarding the timeline to completion going forward, the tasks and estimated completion dates with durations are shown in the table below. The exact durations and dates are subject to change based on unforeseen roadblocks and/or underestimation of the amount of work required.

Table 1. Work breakdown structure between end of Fall 2009 to project due date

Task Name	Duration	Start Date	End Date
Gather interface needs from developers	7d	Sat 12/12/09	Fri 12/18/09
Develop Ergonomic User Interface	25d	Sat 12/19/09	Tue 1/12/10
Link interface with tables & queries	10d	Wed 1/13/10	Fri 1/22/10
Verify Interface interaction with tables & queries	5d	Sat 1/23/10	Wed 1/27/10
Create User Manual	28d	Thu 1/28/10	Wed 2/24/10
Edit User Manual	14d	Thu 2/25/10	Wed 3/10/10
Submit User Manual Draft	1d	Thu 3/11/10	Thu 3/11/10
Create Ergo & U.I. Report	20d	Sat 12/19/09	Thu 1/7/10
Edit Ergo & U.I. Report	7d	Fri 1/8/10	Thu 1/14/10
Draft Due	0d	Mon 3/1/10	Mon 3/1/10
Revise User Manual	7d	Fri 3/12/10	Thu 3/18/10
Print/bind final version, submit online	1d	Fri 3/19/10	Fri 3/19/10

Design: User Manual & Help System

In this section the process of designing the user manual for FES will be discussed. This user manual is designed for a Non-profit management system that was designed in Microsoft Access 2007 by my teammates and I. To design the user manual a Documentation development process was followed. (Williams and Beason, 1990) This process has three main phases: Planning, Outlining and writing, and Production.

Planning

In the planning phase a documentation and document plan is created. The documentation plan is a review and analysis of existing information. This was completed under the literature review chapter in the first quarter of the project. Next a document plan was created. In the document plan some key factors to the user manual design were documented. Those factors are the goal of the manual, definition of the user population, and physical appearance. The goal of the user manual is to create it in such a way that anyone could be given a task without any assistance but the user manual and be able to complete the task. The user population at FES is mostly women over fifty with very little computer knowledge. This leads to how the physical appearance of the user manual was designed. Since the users at FES have very little computer knowledge we decided it would be best to make a hard bound copy of the user manual so they could physically hold and look through. We felt this would be

easier and less complicated to navigate and use than purely a digital copy of the manual. After the planning phase was over, next was the outlining and writing phase.

Outlining and Writing

The second phase was outlining and writing. In this phase a user manual outline was created. To create the outline each page of the non-profit management system was documented and then placed into a logical order. Once a first draft was created we reviewed it and made corrections as needed. The only major corrections to the first draft were to change the order of the sections to make it flow better. After this a final outline was created and approved. (Appendix A)

Production

The third and last phase was the production phase. In this phase the user manual was created by using resources gathered in the previous phases. While designing the user manual there were a couple ergonomic features that were kept in mind. They were to have consistent font color and size and each page must have a consistent layout. The processes of designing each page followed a same pattern. A screen shot is taken of each page in the non-profit management system and then pasted into the manual at the top of the appropriate section. Below the screen shot a description is given, describing information that is needed to use all the functionality on the page. Once this process was completed for every page a first draft was compiled.

Methods

In this section the debugging process will be review. Debugging is the process of checking the consistency of the user manual and non-profit management system. At the end of this section, the creation of the final version of the user manual will be discussed.

Once the first draft of the user manual was finish, it was debugged. My teammates and I each got a copy of the user manual in a digital format on Microsoft Word. We then followed the user manual step-by-step, section-by-section, to make sure that what it said in the user manual was how it was in the non-profit management system. Since the user manual and non-profit management system were being designed at the same time, some of the functionality had changed since the first draft was finished. Those changes were discovered in our debugging of the user manual. After the user manual was debugged, when a section of the non-profit management system was changed the changes would be applied to that same section in the user manual. Once all edits were finished to the non-profit management system, one last round of debugging had to be done. The main body of the user manual was completed and all inconsistencies were fixed.

The final version of the user manual could now be created. The user manual up to this point only consisted of the all functionality of the non-profit management system. The final version still needed a title page, table of contents, introduction to the system, and a quick overview of each section. These sections are put in the front of the user manual so the user has instant access to them. This is designed this way so

someone when user reads the user manual they get a quick and brief understanding of what the non-profit management system is and what it can do. After all of this was completed, the user manual was printed and reviewed for consistency one last time. The final version was then printed in color and bound.

Results and Discussion

In this section the Results will be reviewed and Problems and Limitations discussed.

Results

When designing the user manual I had a couple expectations for the finished version. I wanted it to be short and concise to reduce unnecessary information, intuitive for ease of navigation, and ergonomic. The main ergonomic aspects I expected the user manual to follow were to have consistent font color, style, size, and each page must have a consistent layout.

Once the final version of the user manual was complete, I was able to look back and compare it to what my expectations were. After looking over the final version of the user manual, I noticed that most of my expectations were met. The user manual is short and concise. The introduction has descriptions of each section of the user guide. This allows each section to focus mainly on the functionality of the page. So the user will be able to find specific directions easily and fast. Navigation of the user manual is very intuitive. All the sections are grouped together by section and organized in order. The table of contents also makes navigation easier. A user could quickly scan the table of contents to find the exact page the sections are on. Lastly, I looked at the main ergonomic aspects that I expected. All font color, style, and size were consistent. Each sections title is in blue font and the rest of the fonts are black. Also each page has the

same consistent layout. The screen shots are always located at the top of the screen, then directions below it, and the page number below the directions at the bottom of the page. After reviewing the final version of the user manual I realized that it met all my expectations and more.

Problems and Limitations

A couple of the main problems that I ran into when designing of the user manual were: the non-profit management system was constantly changing and making sure it was designing for the correct user population. The problem I had with the non-profit management system constantly changing is that it would change how something looked or functioned and then it would need to be updated in the user manual. If I could do it over again I think it would be more efficient for the designing of the user manual to start the creation of it after the system was finished. This wouldn't be more efficient for the overall project though, so this is how it had to be done. The other problem I kept running into was making sure the user manual was being designed for the correct user population. This was tough for me because I'm very good with computers. Some of the steps that I would assume they would know I left out. Not on purpose, but because I would over look them. Almost doing a step without realizing what I was doing. Having other team member go over the rough drafts really helped keep the design of the user manual intended for the correct user population.

Conclusion

In conclusion I felt that the design and development of the non-profit management system was a success. We had an iterative process that allowed for corrections often and when needed. This allowed the project to run smoothly with little bumps here and there. The problem is that Friends of the Elephant Seal doesn't have an adequate system to control all the information needed. Our objective was to design a non-profit management system that would be able to control all the information required and accurately. My main focus was the design of the user manual. The user manual will be used for to solve any questions that are needed by the users and to help for training purposes.

Main points

- The design of the user manual was
 - short and concise
 - intuitive
 - ergonomic
- The final version of the user manual met all expectations that I had for the design.
- The objective to create a non-profit management system that was intuitive, ergonomic, and accurate was accomplished.

Appendix A

Final User Manual Outline

- Home page
 - Quick links
- Membership
 - Member Reports
 - All Data - No payment Info
 - All Data - Last Renewal Date
 - Current Members (within 18 months)
 - Current Members - Yearly Renewal Notice
 - Member Type
 - Renewals 12 months out
 - New Members by month
 - Dead Wood
 - Add New Member
 - Edit Member
- Contributions
 - Non-Cash
 - Add
 - Edit
 - Reports
 - All Data -Name, Date, Item, Value
 - Current Non-Cash Data: 12 month period
 - Labels: Non-Cash Thank You
 - Cash
 - Add
 - Edit
 - Reports
 - All Data - Name, Date, Address, Amount, Type
 - Sort All Data by Contribution Type
 - View by Type:
 - Labels: Cash Thank You
- Docents
 - Docent Reports
 - All Data
 - Active Docents
 - Docent Information
 - Docent Cumulative Hours
 - Docent Status

- Hours By Month
 - Roster
 - Change Standard Pay Rate
 - Add Docent
 - Edit Docent
 - Log Hours
- Fundraising
 - Event
 - Details
 - Add New Event
 - Edit Existing Event
 - Expenses
 - Add New Expense
 - Edit Existing Expense
 - Reports
 - View All Expenses for Events
 - Net Income for Event
 - Participant
 - Attendees
 - Add New Attendee
 - Edit Attendee
 - Donors
 - Add New Donor
 - Edit Existing Donor
 - Reports
 - Contact Info by Participant Type
 - Last Donation Data and Product/Service Donated by Donor Type
 - Last Event Attended (Attendee)
 - Labels: All Merchants
 - Labels: All Wineries
 - Labels: All Artists
 - Labels: All Vendors
 - Labels: All Attendees
- Mailing
 - Docent Mail
 - Mail Merge: Active Docents
 - Labels: Active Docent
 - Bulk Email
 - Fundraising Mail

- Labels: All Merchants
- Labels: All Wineries
- Labels: All Artists
- Labels: All Vendors
- Labels: All Attendees
- Membership Mail
 - Mail Merge: Current Members
 - Mail Merge: Renewals (12 Months Out)
 - Mail Merge: Dead Wood
 - Labels: Current Members
 - Labels: Renewals (12 months out)
 - Labels: Dead Wood
 - Bulk Email
- Contributions Mail
 - Mail Merge: Non-Cash Thank You
 - Mail Merge: Cash Thank You
 - Labels: Non-Cash Thank You
 - Labels: Cash Thank You
 - Bulk Email

Bibliography

- 1) Williams, Patricia A., and Pamela S. Beason. Writing Effective Software Documentation. Scott, Foresman and Company, 1990. Print.

Section IV. FES User Manual

The background features a decorative graphic consisting of three blue circles of varying sizes, each composed of concentric rings in different shades of blue. Two thin, light blue lines intersect diagonally across the upper half of the page, creating a triangular shape that frames the circles.

FES Non-Profit Management System User Manual

Introduction

Friends of the Elephant Seal is a non-profit origination that helps protect the elephant seals and also provides educational information about the seals to the many visitors that come to see them every year. The FES Non-profit Management System was specifically designed for FES to keep track and maintain all of their members, docents, contributions, fundraising, and mailing needs. This user manual is designed to provide all of the information needed to use and navigate the FES Non-Profit Management System successfully.

System specifications

- Personal Computer
- Microsoft Access 2007
- Minimal Computer Skills Needed

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Home



This is the home page. It is the default window when the system is opened. It contains quick links to the most commonly used functions and navigation buttons to the main sections of the system.

- **Navigation bar** - Allows navigation to the other sections of the database: Membership, Contributions, Docents, Fundraising, Mailing
- **Quick Links** - Links to the most commonly used functions: Add New Member, Edit Member, Edit Docent, Docent Cumulative Hours

Membership



The membership page allows you to add a new member, edit an existing member, and view many member reports by clicking on the corresponding buttons.

- **Member Reports** - A list of printable member reports:
 - All Data - No Payment Info
 - All Data - Last Renewal Date
 - Current Members (within 18 months
 - Current Members - Yearly Renewal Notice

- Member Type, Renewal 12 months out
 - Renewals By Month
 - Dead Wood
- **Add New Member** - Enter new members information
- **Edit Member** - Edit existing members information

Membership - Member Reports

The screenshot shows the website's navigation bar with links: Home, Membership (highlighted), Contributions, Docents, Fundraising, and Mailing. Below the navigation bar is a red header area with three yellow buttons: "Member Reports", "Add New Member", and "Edit Member". The "Member Reports" button is active, displaying a list of report options on the left side of the page. The options are: "All Data - No Payment Info", "All Data - Last Renewal Date", "Current Members (within 18 months)", "Current Members - Yearly Renewal Notice", "Member Type" (with a dropdown menu and a "GO!" button), "New Members by Month", "Renewals By Month", and "Dead Wood".

This is a list of the all the viewable and printable member reports. Reports can be accessed by clicking on the corresponding links.

- **All Data - No Payment Info** - Every member and all there information without future/ past payment information listed
- **All Data - Last Renewal Date** - All members information with last renewal date listed
- **Current Members (within 18 months)** - Members that have renewed membership within the last 18 months
- **Current Members - Yearly Renewal Notice** - Creates a renewal notice for all members that need to renew

- **Member Type** - Show members by type
- **New Members by Month** - Shows new members, ordered by month joined
- **Renewals by Month** - Show months in which members renewed
- **Dead Wood** - People that have been inactive for five years or more

Membership - Add New Member

The screenshot shows the 'Add New Member' form within the 'Friends of the Elephant Seal' website. The website has a blue header with the logo and name. Below the header is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. The 'Add New Member' form is highlighted in green. It contains a hint box with instructions for each data field. The form fields are organized into two columns. The left column includes First Name, Last Name, Organization, Address, City, State, Zip Code, and Country (pre-filled with USA). The right column includes Home Phone, Work Phone, Mobile Phone, Email Address, Date Joined, Date Renewed, Contact Preference (Email, Phone, Letter, with Letter checked), Notes, and Member Type (a dropdown menu with 'Docent' as an option). A green button at the bottom says 'Click to Submit New Member'.

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Member Reports **Add New Member** **Edit Member**

HINT: This box provides brief instructions/details for each data field.

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Date Joined Date Renewed

State Contact Preference: Email ☐ Phone ☐ Letter ☒

Zip Code Notes

Country Member Type: ☐ Docent

Click to Submit New Member

Add New Member allows you to add a new member to the system.

- **First Name** - Enter first name or household name
- **Last Name** - Enter last name
Note: Leave this blank if members use a household name
- **Organization** - Enter organization name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state
- **Zip Code** - Enter zip code

- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Date Joined** - Enter date of first contribution towards membership
- **Date Renewed** - Enter date that the most recent membership renewal request was sent
- **Contact Preference** - Select methods to contact member: Email, Phone, Letter
- **Notes** - Enter any additional notes
- **Member Type** - Select member type
 - Contributor - \$25 per year
 - Sponsor - \$50 per year
 - Business - \$100 per year
 - Benefactor - \$100 per year
 - Lifetime - \$1,000 per year
- **Docent** - Select if new member is also a docent
- **Click to Submit New Member** - Click to submit new member after members information has been entered into the form

Membership - Edit Member

Friends of the Elephant Seal

[Home](#) [Membership](#) [Contributions](#) [Docents](#) [Fundraising](#) [Mailing](#)

Member Reports **Add New Member** **Edit Member**

HINT: This box provides brief instructions/details for each data field.

Select Name:

First Name

Last Name

Organization

Address

City

State

Zip Code

Country

Home Phone

Work Phone

Mobile Phone

Email Address

Date Joined Date Renewed

Contact Preference: Email ☐ Phone ☐ Letter ☐

Notes

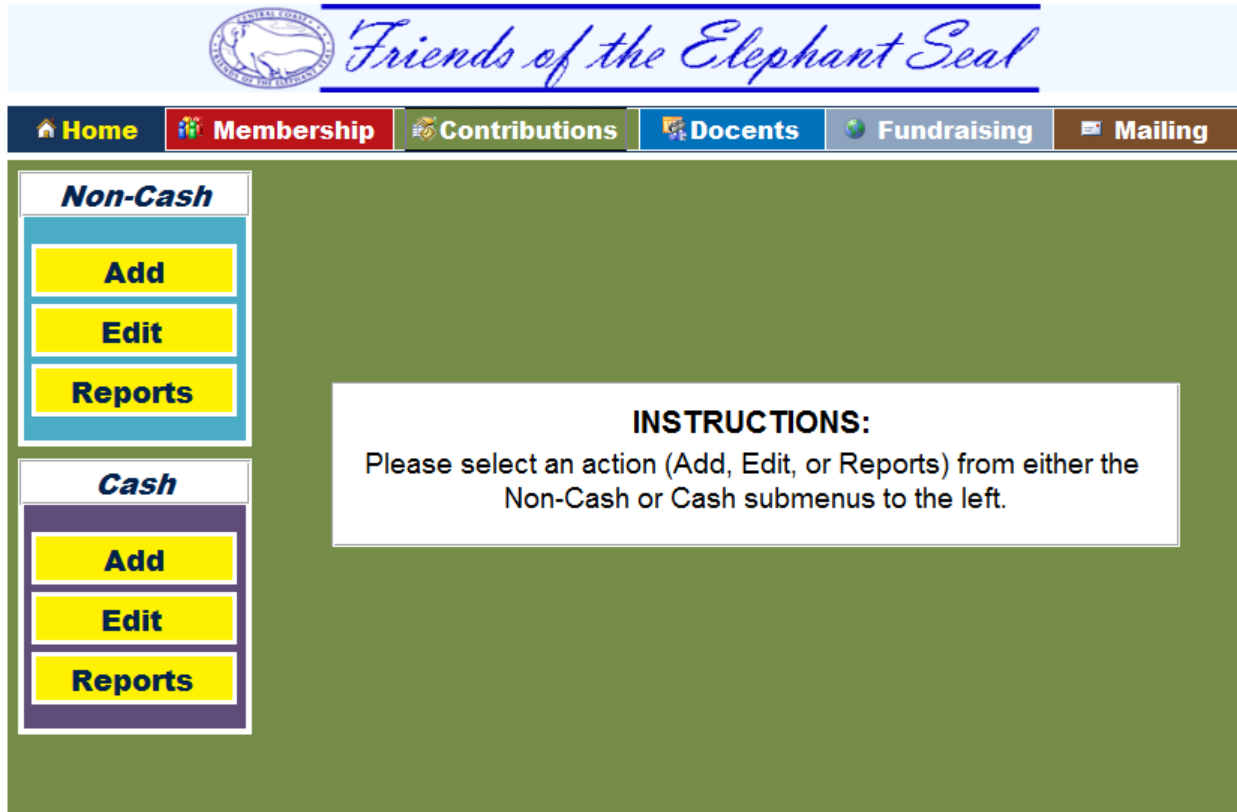
Member Type ☐ Docent

Click to Update Member Info

If current member information has changed the edit member page allows you to edit the selected member's information.

- **Select Name** - Select members name
Note: Once members name is selected the form will be populated with member's information
- **Click to Update Member Info** - After all the edits have been made, click this button to update members information

Contributions



The Contributions page allows you to manage Non-Cash and Cash contributions. Selecting a button takes you to the appropriate page.

- **Non-Cash**
 - **Add** - Add non-cash contributions
 - **Edit** - Edit non-cash contributions
 - **Reports**
 - **All Data - Name, Date, Item, Value** - All non-cash contributions
 - **Current Non-Cash Data: 12 month period** - All non-cash contributions in the last twelve months

- **LABELS: Non-Cash Thank You** - Labels for non-cash thank you letters
- **Cash**
 - **Add** - Add cash contributions
 - **Edit** - Edit cash contributions
 - **Reports**
 - **All Data - Name, Date, Address, Amount, Type** - All cash contributions
 - **Sort All data by Contribution Type** - All cash contributions sorted by type
 - **View by Type** - Cash contributions by type
 - **LABELS: Cash Thank You** - Labels for cash thank you letters

Contributions: Non-Cash - Add

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Non-Cash

Add Edit Reports

Cash

Add Edit Reports

Select Name: OR **Add New Contributor**

INSTRUCTIONS:

Use the "Select Name" drop-down box to select a contributor. Enter details to the right, then click Submit button below.

If this is a NEW contributor, click the yellow "Add New Contributor" button above (right side).

Data Entry for:

Date Donated: Value:

Contribution Type:

Description:

Notes:

Click to Submit Non-Cash Contribution

This page allows you to add non-cash contribution to the system. If the contributors name is not already in the system click the add new contributor button to do so.

- **Select Name** - Select the name of an existing contributor
Note: If the contribution is from a new contributor, select

Add New Contributor button

- **Data Entry For** - Displays currently selected contributors name

- **Date Donated** - Enter date contribution was received
- **Value** - Enter value
- **Contribution Type** - Select type of contribution
- **Description** - Enter description of contribution
- **Notes** - Enter any additional notes
- **Click to Submit Non-Cash Contribution** - Click this button to submit non-cash contribution

Contributions: Non-Cash - Add New Contributor

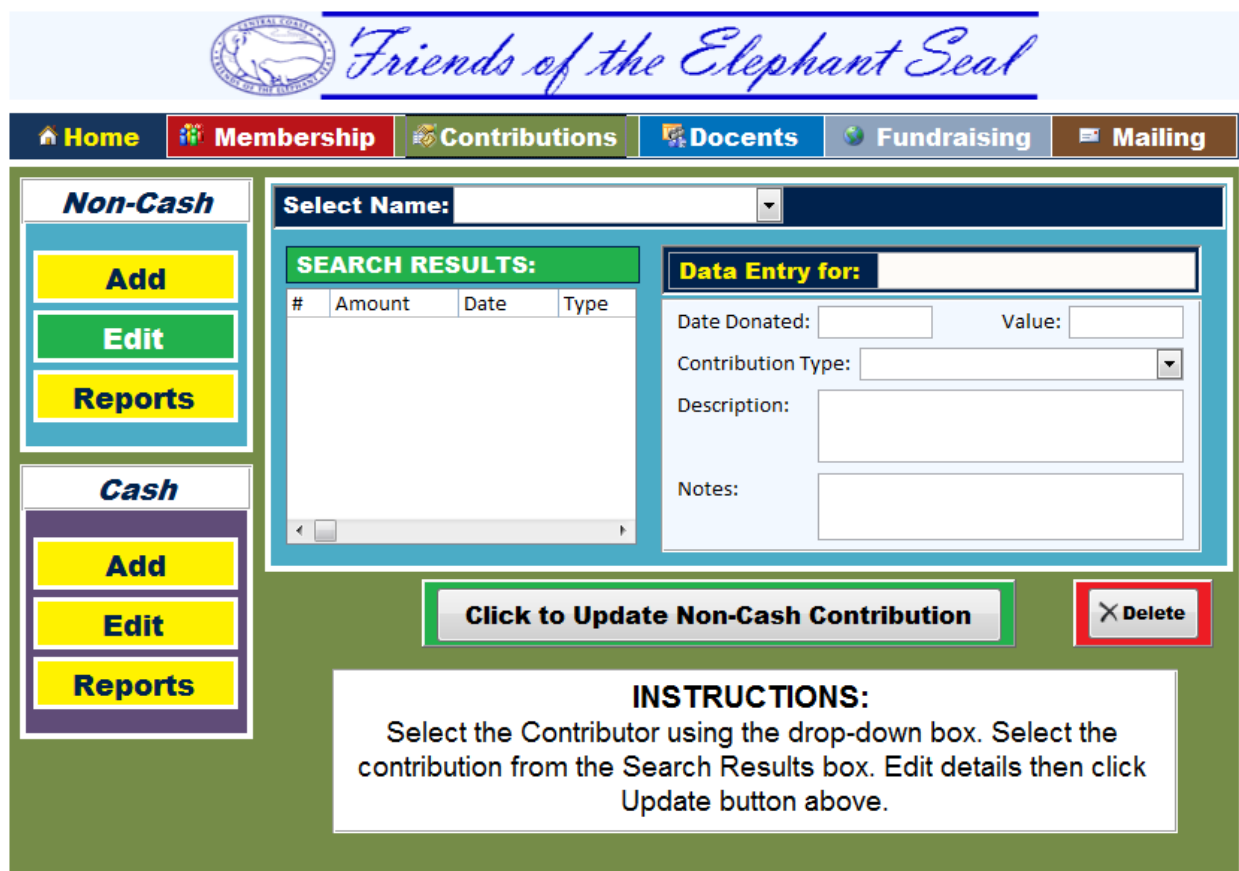
The screenshot shows the 'Friends of the Elephant Seal' website interface. At the top is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. Below this is a sidebar with two main sections: 'Non-Cash' and 'Cash'. The 'Non-Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The 'Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The main content area is titled 'Enter Details for New Non-Cash Contributor below:'. It features a 'Select Name:' dropdown menu followed by 'OR' and a green button labeled 'Add New Contributor'. Below this, there are input fields for: First Name, Last Name, Organization, Address, City, State, Zip Code, Country, Home Phone, Work Phone, Mobile Phone, Email Address, and Notes. A large yellow button labeled 'Next' is positioned at the bottom right of the form area.

This page allows new contributors information to be added to the system.

- **First Name** - Enter first name or household name
- **Last Name** - Enter last name
Note: Leave this blank if contributor uses a household name
- **Organization** - Enter organization name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state
- **Zip Code** - Enter zip code

- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Notes** - Enter any additional notes
- **Next** - Click this button to proceed to adding a non-cash contribution

Contributions: Non-Cash - Edit



Friends of the Elephant Seal

Home Membership **Contributions** Docents Fundraising Mailing

Non-Cash

Add Edit Reports

Cash

Add Edit Reports

Select Name:

SEARCH RESULTS:

#	Amount	Date	Type
---	--------	------	------

Data Entry for:

Date Donated: Value:

Contribution Type:

Description:

Notes:

[Click to Update Non-Cash Contribution](#) [Delete](#)

INSTRUCTIONS:
Select the Contributor using the drop-down box. Select the contribution from the Search Results box. Edit details then click Update button above.

This page allows you to edit previously entered non-cash contributions by selecting the name of the contributor and the contribution to edit.

- **Select Name** - Select the name of an existing contributor
- **Search Results** - Displays contributors history
- **Data Entry For** - Displays currently selected contributors name
- **Date Donated** - Displays when contribution was received
- **Value** - Displays value
- **Contribution Type** - Displays type of contribution

- **Description** - Displays description of contribution
- **Notes** - Displays any additional notes
- **Click to Submit Non-Cash Contribution** - Click this button to submit edits to non-cash contribution
- **Delete** - Click this button to delete currently selected contribution

Contributions: Non-Cash - Reports



This is a list of the all the viewable and printable Non-Cash contribution reports.

Reports can be accessed by clicking on the corresponding links.

- **All Data - Name, Date, Item, Value** - Displays all non-cash contributions
- **Current Non-Cash Data: 12 month period** - Displays all non-cash contributions within the last 12 months
- **LABELS: Non-Cash Thank You** - Printable address labels for non-cash contribution thank you letters

Contributions: Cash - Add

The screenshot shows a web interface for 'Friends of the Elephant Seal'. At the top is a navigation bar with links: Home, Membership, Contributions (active), Docents, Fundraising, and Mailing. Below the navigation bar is a sidebar with two sections: 'Non-Cash' and 'Cash'. The 'Non-Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The 'Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The main content area is titled 'Select Name:' with a dropdown menu and a yellow button labeled 'OR Add New Contributor'. Below this is a box containing 'INSTRUCTIONS:' which reads: 'Use the "Select Name" drop-down box to select a contributor. Enter details to the right, then click Submit button below. If this is a NEW contributor, click the yellow "Add New Contributor" button above (right side).' To the right of the instructions is a 'Data Entry for:' section with fields for 'Date Donated:', 'Amount:', 'Contribution Type:' (a dropdown menu), 'Description:', and 'Notes:'. At the bottom of the main content area is a large button labeled 'Click to Submit Cash Contribution'.

This page allows you to add cash contribution to the system. If the contributors name is not already in the system click the add new contributor button to do so.

- **Select Name** - Select the name of an existing contributor
Note: If the contribution is from a new contributor, select

 button

- **Data Entry For** - Displays currently selected contributors name
- **Date Donated** - Enter date contribution was received
- **Value** - Enter value

- **Contribution Type** - Select type of contribution
- **Description** - Enter description of contribution
- **Notes** - Enter any additional notes
- **Click to Submit Cash Contribution** - Click this button to submit cash contribution

Contributions: Cash - Add New Contributor

The screenshot shows the 'Friends of the Elephant Seal' website interface. At the top is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. Below this is a sidebar with two main sections: 'Non-Cash' and 'Cash'. The 'Non-Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The 'Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The main content area is titled 'Enter Details for New Cash Contributor below:' and contains a form with the following fields: First Name, Last Name, Organization, Address, City, State, Zip Code, Country, Home Phone, Work Phone, Mobile Phone, Email Address, and Notes. A 'Next' button is located at the bottom right of the form. Above the form, there is a 'Select Name:' dropdown menu and a link to 'Add New Contributor'.

This page allows new contributors information to be added to the system.

- **First Name** - Enter first name or household name
- **Last Name** - Enter last name
Note: Leave this blank if contributor uses a household name
- **Organization** - Enter organization name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state
- **Zip Code** - Enter zip code

- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Notes** - Enter any additional notes
- **Next** - Click this button to proceed to adding a non-cash contribution

Contributions: Cash - Edit

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Non-Cash

Add Edit Reports

Cash

Add Edit Reports

Select Name:

SEARCH RESULTS:

#	Amount	Date	Type

Data Entry for:

Date Donated: Value:

Contribution Type:

Description:

Notes:

Click to Update Cash Contribution **Delete**

INSTRUCTIONS:
Select the Contributor using the drop-down box. Select the contribution from the Search Results box. Edit details then click Update button above.

This page allows you to edit previously entered cash contributions by selecting the name of the contributor and the contribution to edit.

- **Select Name** - Select the name of an existing contributor
- **Search Results** - Displays contributors history
- **Data Entry For** - Displays currently selected contributors name
- **Date Donated** - Displays when contribution was received
- **Value** - Displays value
- **Contribution Type** -Displays type of contribution
- **Description** - Displays description of contribution
- **Notes** - Displays any additional notes
- **Click to Submit Non-Cash Contribution** - Click this button to submit edits to non-cash contribution
- **Delete** - Click this button to delete currently selected contribution

Contributions: Cash - Reports

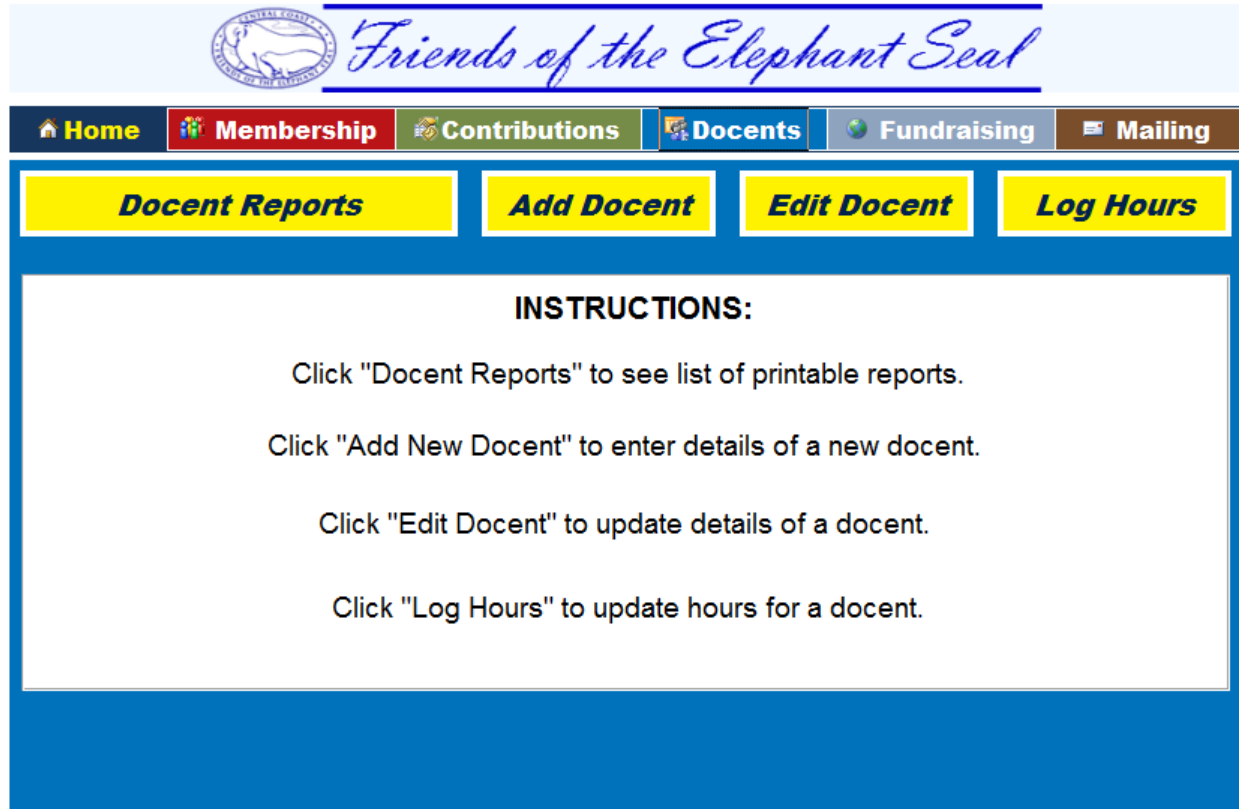
The screenshot shows the 'Friends of the Elephant Seal' website. The header features the organization's logo and name. A navigation bar includes links for Home, Membership, Contributions, Docents, Fundraising, and Mailing. The main content area is divided into two sections: 'Non-Cash' and 'Cash'. The 'Non-Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The 'Cash' section has buttons for 'Add', 'Edit', and 'Reports'. The 'Cash Reports' section is highlighted, showing options to view all data, sort by contribution type, and view by type. A 'GO!' button is next to the 'View by Type' dropdown. A link for 'LABELS: Cash Thank You' is also visible.

This is a list of the all the viewable and printable Cash contribution reports.

Reports can be accessed by clicking on the corresponding links.

- **All Data - Name, Date, Address, Amount, Type** - Displays all cash contributions
- **Sort All Data by Contribution Type** - Displays all cash contributions sorted by contribution type
- **View by Type** - Display all cash contributions of a selected type
- **LABELS: Cash Thank You** - Printable address labels for cash contribution thank you letters

Docents - Home



The Docents page allow you to add a new docent, edit an existing docent, log docent hours, and view available docent reports by clicking on the corresponding buttons.

- **Docent Reports**
 - Active Docents
 - Docent Information
 - Docent Cumulative Hours
 - Docent Status
 - Hours By Docent By Month

- **Add Docent** - Enter new docent information
- **Edit Docent** - Edit docent information
- **Log Hours** - Log docent hours

Docents - Reports



This is a list of the all the viewable and printable Cash contribution reports.

Reports can be accessed by clicking on the corresponding links.

- **Active Docents** - Displays active docents
- **Docent Information** - Displays docent information
- **Docent Cumulative Hours** - Displays docent cumulative hours
- **Docent Category** - Displays docents by selected category
 - Active
 - Bluffs
 - Office Only
 - On Leave

- Outreach
 - Sub
- **Hours By Month** - Displays docent hours by month

Docents - Add Docent

The screenshot shows the 'Friends of the Elephant Seal' website interface. At the top is a navigation bar with links: Home, Membership, Contributions, Docents (highlighted), Fundraising, and Mailing. Below this is a secondary navigation bar with buttons: Docent Reports, Add Docent (highlighted), Edit Docent, and Log Hours. The main content area is titled 'HINT: Enter First Name' and contains a form with the following fields:

First Name	<input type="text"/>	Home Phone	<input type="text"/>
Last Name	<input type="text"/>	Work Phone	<input type="text"/>
Address	<input type="text"/>	Mobile Phone	<input type="text"/>
City	<input type="text"/>	Email Address	<input type="text"/>
State	<input type="text"/>	Class Year	<input type="text"/>
Zip Code	<input type="text"/>	Contact Preference: Email <input type="checkbox"/> Phone <input type="checkbox"/> Letter <input checked="" type="checkbox"/>	
Country	<input type="text" value="USA"/>	Notes	<input type="text"/>
		Docent Status:	<input type="text"/> <input type="checkbox"/> Member

At the bottom of the form is a large green button labeled 'Click to Submit New Docent'.

Add Docent allows you to add a new docent into the system. If the new docent is already a member, edit the member's information in the Edit Member section, and click the docent check box.

- **First Name** - Enter first name or household name
- **Last Name** - Enter last name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state

- **Zip Code** - Enter zip code
- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Class Year** - Enter year docent joined
- **Contact Preference** - Select methods to contact member: Email, Phone, Letter
- **Notes** - Enter any additional notes
- **Category** - Select docents category
 - Active
 - Bluffs
 - Office Only
 - On Leave
 - Outreach
 - Sub
- **Member** - Select if new docent is also a member
- **Click to Submit New Docent** - Click to submit new docent after docents information has been entered into the form

Docents - Edit Docent

HINT: This box provides brief instructions/details for each data field.

Select Name:

First Name

Last Name

Address

City

State

Zip Code

Country

Home Phone

Work Phone

Mobile Phone

Email Address

Class Year

Contact Preference: Email ☐ Phone ☐ Letter ☐

Notes

Docent Status: ☐ Member

Click to Update Docent Info

If current docent information has changed the edit docent page allows you to edit the selected docent's information.

- **Select Name** - Select docents name
Note: Once docents name is selected the form will be populated with docent's information
- **Click to Update Docent Info** - After all the edits have been made, click this button to update members information

Docents - Log Hours

Friends of the Elephant Seal

[Home](#) [Membership](#) [Contributions](#) [Docents](#) [Fundraising](#) [Mailing](#)

Docent Reports **Add Docent** **Edit Docent** **Log Hours**

Select Docent Name: **Edit Previously Entered Hours**

Instructions:

Use the drop-down box above to find the docent by last name. You can type the first few letters of the last name to quickly jump to that part of the list. Click the name for whom you wish to input hours. Fill in the fields to the right and click the Submit button below to add the record to the database. All hours are viewable in the Docent Reports section.

Data Entry for:

Date Work Performed:

Number of Hours:

Click to Submit Docent Hours

The Log Hours page allows you to log docent hours into the system.

- **Select Docent Name** - Select docents name

Note: To edit previously entered hours of selected docent click on the

 **Edit Previously Entered Hours** button

- **Data Entry for** - Displays currently selected docents name
- **Date Work Performed** - Enter date when the work was performed
- **Number of Hours** - Enter number of hours worked
- **Click to Submit Docent Hours** - Click this button to log docent hours

Fundraising - Home



This is the Fundraising main page. It allows you to manage fundraising events and its participants. Selecting a button takes you to the appropriate page.

- **Event**
 - **Details**
 - **Add New Event** - Enter event information
 - **Edit Existing Event** - Edit existing event details
 - **Expenses**
 - **Add New Expense** - Add new expense for selected event
 - **Edit Existing Expense** - Edit existing expense details
 - **Reports**

- **View All Expenses for Event** - Displays all expenses for selected event
 - **Auction Income for Event** - Displays auction income for selected event
- **Participant**
 - **Attendees**
 - **Add New Attendee** - Enter new attendees information
 - **Edit Attendee** - Edit attendees information
 - **Donors**
 - **Add New Donor** - Enter new donor information
 - **Edit Existing Donor** - Edit existing donor information
 - **Reports**
 - **Contact Info by Participant Type** - Displays contact information for selected participant type
 - **Last Donation Date and Product/Service Donated by Donor Type** - Displays last donation date and product/service donated by selected type
 - **Last Event Attended (Attendee)** - Displays all attendees last event attended

Fundraising: Event - Details



In the event details page a new event can be added or an existing event can be edited by selecting the corresponding button.

- **Add New Event** - Enter new event information
- **Edit Existing Event** - Edit existing event details

Fundraising: Event - Details: Add New Event

The screenshot displays the 'Friends of the Elephant Seal' website interface. At the top, there is a logo featuring an elephant seal and the organization's name in a cursive font. Below the logo is a navigation bar with buttons for Home, Membership, Contributions, Docents, Fundraising, and Mailing. The main content area is divided into two columns. The left column contains a sidebar with a menu for 'Event' (Details, Expenses, Reports) and 'Participant' (Attendees, Donors, Reports). The right column features a form titled 'Add New Event' with a green button and an 'Edit Existing Event' button with a yellow background. The form includes input fields for Event Name, Event Date, Event Time, Location, and a large text area for Notes. A green button labeled 'Click to Submit New Event' is positioned at the bottom of the form.

Event

Details

Expenses

Reports

Participant

Attendees

Donors

Reports

Add New Event

Edit Existing Event

Event Name:

Event Date: Event Time:

Location:

Notes:

Click to Submit New Event

This page allows you enter the information for a new fundraising event.

- **Event Name** - Enter events name
- **Event Date** - Enter date for event
- **Event Time** - Enter event time
- **Location** - Enter event location
- **Notes** - Enter any additional notes for the event
- **Click to Submit New Event** - Click this button to submit new event

Fundraising: Event - Details: Edit Existing Event

The screenshot displays the 'Friends of the Elephant Seal' website interface. At the top, there is a logo featuring an elephant seal and the text 'FRIENDS OF THE ELEPHANT SEAL'. Below the logo is the title 'Friends of the Elephant Seal' in a cursive font. A navigation bar contains links for Home, Membership, Contributions, Docents, Fundraising, and Mailing. The 'Fundraising' link is highlighted. On the left side, there is a sidebar with a menu for 'Event' (Details, Expenses, Reports) and 'Participant' (Attendees, Donors, Reports). The main content area is titled 'Edit Existing Event' and contains a form for editing event details. The form includes a 'Select Event:' dropdown menu, and input fields for 'Event Name:', 'Event Date:', 'Event Time:', 'Location:', and 'Notes:'. A 'Click to Update Event Info' button is located at the bottom of the form.

Event

Details

Expenses

Reports

Participant

Attendees

Donors

Reports

Add New Event

Edit Existing Event

Select Event:

Event Name:

Event Date: Event Time:

Location:

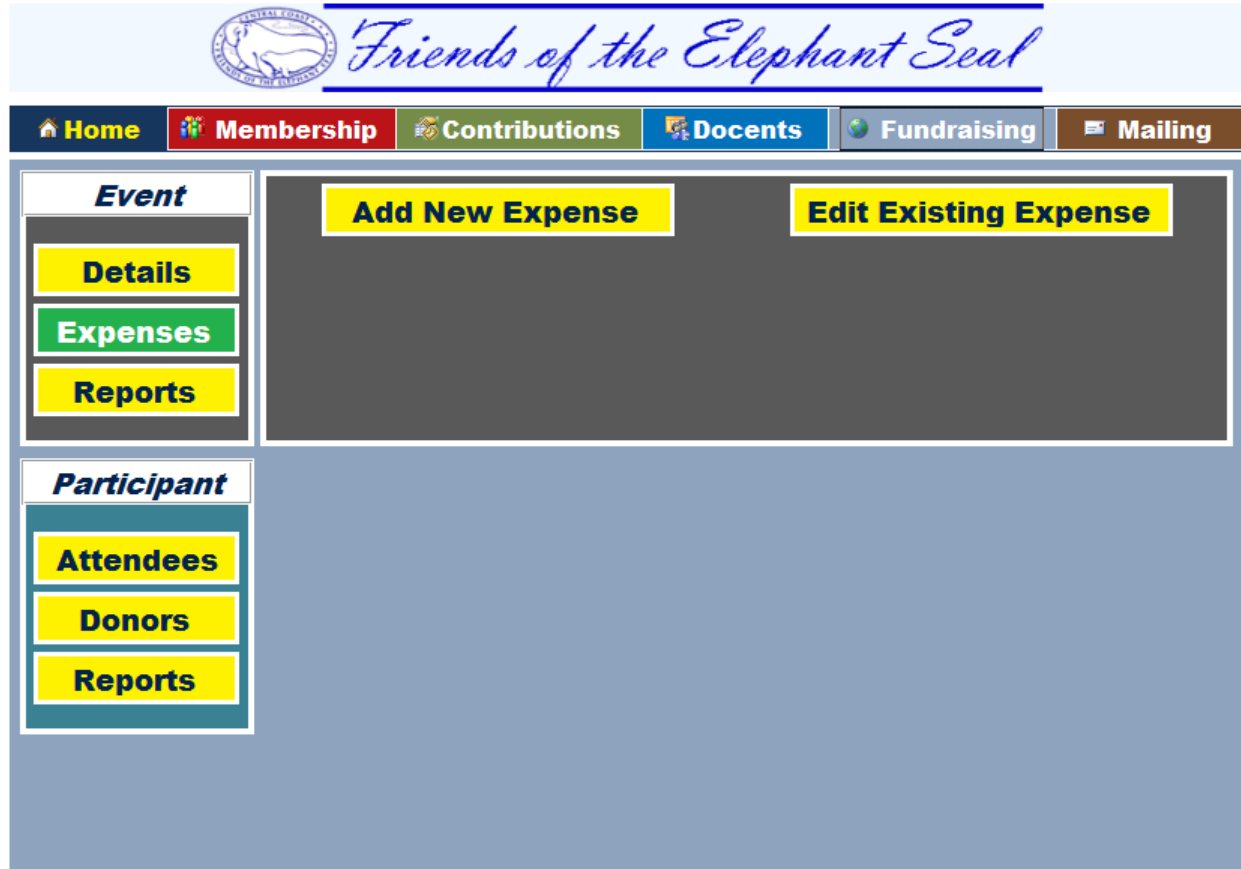
Notes:

Click to Update Event Info

This page allows you to edit the information of an already existing event.

- **Select Event** - Select event to edit
Note: Once event is selected the form will be populated with the event details
- **Click to Update Event Info** - After all the edits have been made, click this button to update event information

Fundraising: Event - Expenses



In the event expenses page a new event expense can be added or an existing event expense can be edited by selecting the corresponding button.

- **Add New Expense** - Add new expense for selected event
- **Edit Existing Expense** - Edit existing expense details

Fundraising: Event - Expenses: Add New Expense

The screenshot shows the 'Friends of the Elephant Seal' website interface. At the top is the organization's logo and name. Below is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. The main content area is divided into two columns. The left column has a sidebar with 'Event' and 'Participant' sections. The 'Event' section includes 'Details', 'Expenses', and 'Reports'. The 'Participant' section includes 'Attendees', 'Donors', and 'Reports'. The right column features a form titled 'Add New Expense' (highlighted in green) and 'Edit Existing Expense' (highlighted in yellow). The form includes a 'Select Event:' dropdown, a 'Select Name of Provider:' dropdown, a '- OR -' separator, an 'Enter Name of New Provider:' text field, a 'Service Provided:' text field, a 'Cost:' text field, and a 'Notes:' text area. At the bottom of the form is a 'Click to Submit New Expense' button (highlighted in green).

This page allows you enter the information for a new event expense.

- **Select Event** - Select event for expense
- **Select Name of Provider** - Select name of provider
Note: If provider is not in the list then enter it into the Enter Name of New

Provider field

- **Enter Name of New Provider** - Enter name of new provider
- **Service Provided** - Enter service provided
- **Cost** - Enter cost of expense
- **Notes** - Enter any additional notes needed for expense
- **Click to Submit New Expense** - Click this button to submit new expense

Fundraising: Event - Expenses: Edit Existing Expense

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

Details Expenses Reports

Participant

Attendees Donors Reports

Add New Expense **Edit Existing Expense**

Select Event:

The expenses for the selected event are listed below.
Click the expense below to edit then click "Next"

Item Provided	Provider	Cost	Notes
---------------	----------	------	-------

Next

The Edit Existing Expense page allows you to edit an existing event expense.

- **Select Event** - Select event to edit its expenses
- **Select Expense** - Select expense to be edited
- **Next** - Once an expense is selected, click the next button to edit its details

Fundraising: Event - Reports

The screenshot displays the website interface for 'Friends of the Elephant Seal'. At the top, there is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. Below this, a sidebar on the left contains two main sections: 'Event' and 'Participant'. The 'Event' section has sub-links for Details, Expenses, and Reports (which is highlighted in green). The 'Participant' section has sub-links for Attendees, Donors, and Reports. The main content area is titled 'Event Reports' and features two input fields with 'GO!' buttons. The first field is labeled 'View All Expenses for Event:' and the second is labeled 'Auction Income for Event:'. Both fields have dropdown menus and a 'GO!' button to the right.

Event

Details

Expenses

Reports

Participant

Attendees

Donors

Reports

Event Reports

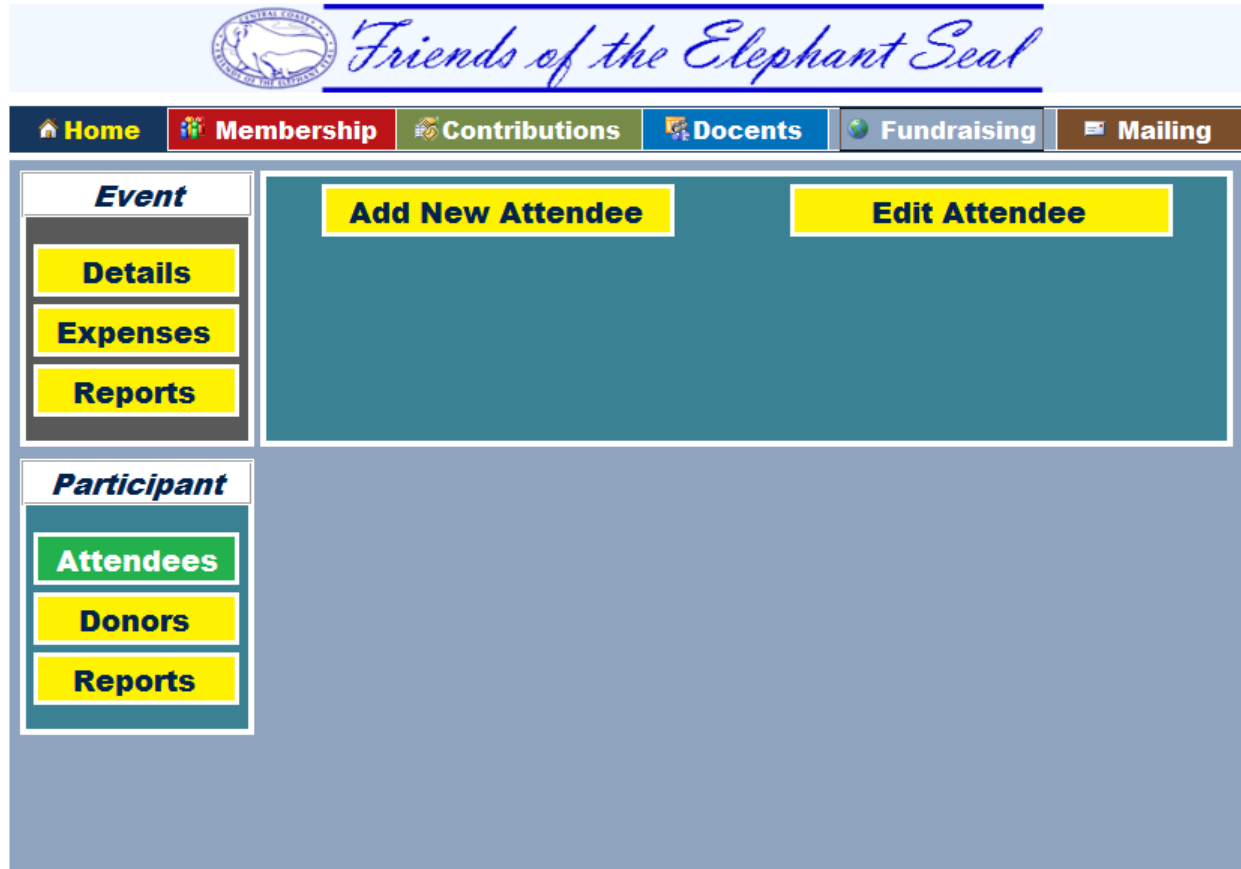
View All Expenses for Event:

Auction Income for Event:

This is a list of the all the viewable and printable Event reports. Reports can be accessed by selecting the event and clicking on the corresponding Go button.

- **View all Expenses for Event** - Displays all expenses for selected event
- **Auction Income for Event** - Displays auction income for selected event

Fundraising: Participant - Attendees



In the participant attendees page a new attendee can be added or an existing attendee can be edited by selecting the corresponding button.

- **Add New Attendee** - Enter new attendees information
- **Edit Attendee** - Edit attendees information

Fundraising: Participant - Attendees: Add New Attendee

The screenshot shows a web application interface for 'Friends of the Elephant Seal'. At the top is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. Below this is a sidebar with a tree structure. Under the 'Event' category, there are links for Details, Expenses, and Reports. Under the 'Participant' category, there are links for Attendees (highlighted in green), Donors, and Reports. The main content area is titled 'Add New Attendee' (in a green box) and 'Edit Attendee' (in a yellow box). The 'Add New Attendee' section contains two dropdown menus: 'Select Name:' with a note '(if not in list, Enter Info Below)' and 'Select Event:'. Below these are input fields for: First Name, Last Name, Organization, Address, City, State, Zip Code, Country, Home Phone, Work Phone, Mobile Phone, Email Address, Ticket Numbers, and a checkbox for 'Purchased Auction Item at this event'. There is also a dropdown for 'Item Purchased:'. At the bottom of the form is a large green button labeled 'Click to Submit New Attendee Info'.

The Add New Attendee page allows you to add a new attendee to an existing event. To add a new attendee the select name field must be blank.

- **Select Name** - Select name of attendee
Note: If name is not in the list, enter information in the form below
- **Select Event** - Select the event that the attendee is attending. Event must be previously added
- **First Name** - Enter first name or household name
- **Last Name** - Enter last name

- **Organization** - Enter organization name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state
- **Zip Code** - Enter zip code
- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Ticket Numbers** - Enter ticket numbers purchase
- **Purchased Auction Item at this event** - Check if attendee purchased an auction item
- **Item Purchased** - Select item attendee purchased
- **Click to Submit New Attendee Info** - Click to submit new attendee information

Fundraising: Participant - Attendees: Edit Attendee

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees**
- Donors
- Reports

Add New Attendee **Edit Attendee**

Select Name: **AND**

Select Event:

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Ticket Numbers

State Purchased Auction Item at this event ☐

Zip Code Item Purchased:

Country

Click to Edit Attendee Info **Delete**

The Edit Attendee page allows you to edit the information of previously entered attendees.

- **Select Name** - Select attendees name
 - **Select Event** - Select event
- Note: Once name and event is selected the form will be populated with the attendees details
- **Click to Update Attendee Info** - After all the edits have been made, click this button to update attendee information
 - **Delete** - Click this button to delete currently selected attendee at the currently selected event

Fundraising: Participant - Donors



The participant donor page allows you to add a new donor or edit an existing donor of an already existing event.

- **Add New Donor** - Enter new donor information
- **Edit Existing Donor** - Edit existing donor information

Fundraising: Participant - Donors: Add New Donor

The screenshot displays the 'Friends of the Elephant Seal' website interface. At the top, there is a logo featuring an elephant seal and the text 'Friends of the Elephant Seal'. Below the logo is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. The main content area is divided into two sections: 'Event' and 'Participant'. The 'Event' section has links for Details, Expenses, and Reports. The 'Participant' section has links for Attendees, Donors, and Reports. The 'Add New Donor' form is located in the center. It includes a 'Select Name' dropdown menu with a note '(if not in list, Enter Info Below)', a 'Select Event' dropdown menu, and a series of input fields for donor information: First Name, Last Name, Organization, Address, City, State, Zip Code, Country, Home Phone, Work Phone, Mobile Phone, Email Address, Notes, Select Donor Type, Product/Service Provided, Claimed Value, Amt. Received, and a field for 'If not sold, enter highest bid'. A 'Click to Submit New Donor Info' button is at the bottom.

Friends of the Elephant Seal

[Home](#) [Membership](#) [Contributions](#) [Docents](#) [Fundraising](#) [Mailing](#)

Event

[Details](#)
[Expenses](#)
[Reports](#)

Participant

[Attendees](#)
[Donors](#)
[Reports](#)

Add New Donor **Edit Existing Donor**

Select Name: (if not in list, Enter Info Below)

Select Event:

First Name Home Phone
Last Name Work Phone
Organization Mobile Phone
Address Email Address
City Notes
State Select Donor Type:
Zip Code Product/Service Provided:
Country Claimed Value: Amt. Received:
If not sold, enter highest bid:

Click to Submit New Donor Info

This page allows you enter the information for a new donor to an existing event.

To add a new donor the select name field needs to be blank.

- **Select Name** - Select name of donor
Note: If name is not in the list, enter information in the form below

- **Select Event** -Select the event that the donor is donating to. Event must be previously added
- **First Name** - Enter first name or household name
- **Last Name** - Enter last name
- **Organization** - Enter organization name
- **Address** - Enter street address or mailing address
- **City** - Enter city
- **State** - Enter state
- **Zip Code** - Enter zip code
- **Country** - Enter country
- **Home Phone** - Enter home phone number including area code
- **Work Phone** - Enter work phone number including area code
- **Mobile Phone** - Enter mobile phone number including area code
- **Email Address** - Enter email address
- **Notes** - Enter any additional notes
- **Select Donor Type** - Select donor type
- **Product/Service Provided** - Enter product or service provided by donor
- **Claimed Value** - Enter value of product or service
- **Amt. Received** - Enter amount received
- **If not sold, enter highest bid** - If the product or service is not sold, enter the highest bid
- **Click to Submit New Donor Info** - Click to submit new donor information

Fundraising: Participant - Donors: Edit Existing Donor

Friends of the Elephant Seal

Home Membership Contributions Docents Fundraising Mailing

Event

- Details
- Expenses
- Reports

Participant

- Attendees
- Donors**
- Reports

Add New Donor **Edit Existing Donor**

Select Name: (if not in list, Enter Info Below)

Select Event:

First Name Home Phone

Last Name Work Phone

Organization Mobile Phone

Address Email Address

City Notes

State Select Donor Type:

Zip Code Product/Service Provided:

Country Claimed Value: Amt. Received:

If not sold, enter highest bid:

Click to Update Donor Info **Delete**

The Edit Existing Donor page allows you to edit an existing donor by selecting the name and the event.

- **Select Name** - Select existing donor name
- **Select Event** - Select event

Note: Once name and event is selected the form will be populated with the donors details

- **Click to Update Donor Info** - After all the edits have been made, click this button to update donors information
- **Delete** - Click this button to delete currently selected donor at the currently selected event

Fundraising: Participant - Reports

The screenshot displays the 'Friends of the Elephant Seal' website interface. At the top, there is a navigation bar with links: Home, Membership, Contributions, Docents, Fundraising, and Mailing. Below this, a sidebar on the left contains a menu with 'Event' (Details, Expenses, Reports) and 'Participant' (Attendees, Donors, Reports). The main content area is titled 'Participant Reports and Labels' and features three filter options: 'Contact Info by Participant Type' with a dropdown and 'GO!' button, 'Last Donation Date and Product/Service Donated by Donor Type' with a dropdown and 'GO!' button, and 'Last Event Attended (Attendee)' with a dropdown. Below these filters, there are five links for generating labels: 'Labels: All Merchants', 'Labels: All Artists', 'Labels: All Attendees', 'Labels: All Wineries', and 'Labels: All Vendors'.

This is a list of the all the viewable and printable Event reports. Reports can be accessed by selecting the participant type and clicking on the corresponding Go button. Also mailing labels can be created here by clicking on the corresponding link.

- **Contact Info by Participant Type** - Display contact information of selected type

- **Last Donation Date and Product/Service Donated by Donor Type -**
Display last donation date of the product or service donated by selected type
- **Last Event Attended (Attendee) -** Display last event attendee attended
- **LABELS: All Merchants -** Display printable address labels for merchants
- **LABELS: All Wineries -** Display printable address labels for wineries
- **LABELS: All Artists -** Display printable address labels for Artists
- **LABELS: All Vendors -** Display printable address labels for vendors
- **LABELS: All Attendees -** Display printable address labels for attendees



Mailing

This page creates mailing labels and mass letters for docent's, membership, contributions, and fundraising by selecting the corresponding link.